# **GZA GeoEnvironmental, Inc.**

Engineers and Scientists

October 20, 2009 File No. 43532.10

Mr. Victor Alvarez
United States Environmental Protection Agency – Region 1
1 Congress Street, Suite 1100
Boston, Massachusetts 02114-2023

**GZ**()

One Edgewater Drive Norwood Massachusetts 02062 781-278-3700 FAX 781-278-5701 http://www.gza.com Re: Submittal of Notice of Intent (NOI)

Excavation Dewatering –Lebanon Brook Remediation Restoration

11 Village Drive

Southbridge, Massachusetts MassDEP - RTN No. 2-13744

Dear Mr. Alvarez:

On behalf of Brookside Terrace Associates, LP (BT), GZA GeoEnvironmental, Inc. (GZA) has prepared this Notice of Intent (NOI) for application of a National Pollutant Discharge Elimination System (NPDES) Remediation General Permit (RGP) for proposed remediation activities at the above referenced location (Figure 1). This NOI is being submitted for conducting the remedial action chosen in the Phase III Remedial Action Plan (RAP) to remove soil containing polychlorinated biphenyls (PCBs) and lead from the north bank of Lebanon Brook and to remove an area of PCB impacted sediment in portions of Lebanon Brook as per Massachusetts Contingency Plan (MCP: 310 CMR 40.0000).

The proposed remedial activities are described in GZA's Phase III - RAP submitted to the Massachusetts Department of Environmental Protection (MassDEP) on November 24, 2008. The Site remediation will be conducted in accordance with all applicable MassDEP regulations and under the guidance of a Licensed Site Professional (LSP). As there is a likely need to discharge water generated from the dewatering of the areas of the brook to be excavated, the enclosed NOI form provides required information on the general site conditions, proposed treatment system, discharge location and receiving water, and analytical results for the Lebanon Brook channel, which is shown in Figure 2.

The excavation, dewatering, and discharge of treated water are scheduled to begin during low-flow season in summer 2010.

#### **SITE DESCRIPTION**

The Site consists of two parcels of land totaling approximately 19.5 acres and is occupied by the Brookside Terrace Apartment buildings. Lebanon Brook, a tributary of the Quinebaug River, traverses the Site from northwest to southeast. The Site consists of 17 apartment buildings and one maintenance/office building which were constructed in 1974. The Site is bounded to the north by wooded areas and an abandoned rail line beyond which is the Quinebaug River; to the east by wooded areas; to the south by Route 131 and a



residential area; and to the west by Sandersdale Road and a commercial/industrial area. Figure 2 depicts relevant Site features.

Lebanon Brook has a watershed of approximately 10 square miles (SM). The on-Site portion of Lebanon Brook is approximately 1,600 linear feet (LF) of stream channel between an old unused bridge on-Site (located approximately 460 feet downstream of the Route 131 bridge), and the confluence with the Quinebaug River. The road servicing the Brookside Terrace Apartment complex is Village Drive, a portion of which is a circular roadway, which crosses Lebanon Brook in two locations.

#### Site History

Based on historical records the upland portion of the Site north of Lebanon Brook was extensively filled prior to construction of the apartment buildings. PCBs and certain inorganic metals (primarily lead and antimony) were detected in Site materials coincident with the likely limits of these historically filled areas. The source of these impacted fills, which were likely placed on-Site between 1962 and 1974, is unknown. The northern and eastern extents of these fills were found to generally coincide with the property line near the railroad line. Based on upland investigations and remediation performed by Rizzo Associates, this fill extends south and west toward the current configuration of Lebanon Brook. Fill depths were observed to generally extend from approximately 4 to 6 feet below grade.

#### PROPOSED ACTIVITIES

The 1,300 LF of soil along the North Bank of Lebanon Brook will be removed with an excavator. Work will start upstream near the "Old Bridge" and move downstream. Work will be conducted in manageable cells of 50-100 feet depending on water flow and site conditions. Impacted material will be taken to the Primary Remediation Staging Area located in the eastern portion of the Site in the parking lot for the "New Playground Area" (see Figure 2). Additionally up to 4000 SF of oil-impacted sediment in Lebanon Brook referred to as the Area of Readily Apparent Harm (RAH) will be removed during the same time period as the sediments in the North Bank.

Access to the North Bank will be gained through existing roadways wherever possible but equipment will need to have enough room to maneuver safely from the top of the bank. Excavation will be conducted "in the dry" condition created by the establishment of the Aqua-Barrier and the diversion of the stream through a 4 foot pipe. Water from all initial dewatering and groundwater into the dewatered area will be pumped into a fractionation tank and then through a temporary on-site treatment system to remove contaminants, as per the requirements of the NPDES-RGP, and discharged as shown on Figure 2. The fractionation tanks and treatment system will be located in up to three different areas in order to accommodate the particular area of excavation on the North Bank. The excavated material will then be loaded onto a truck, which will transport it to the Remediation Staging Area. The material will be stockpiled in a poly-lined containment cell formed by jersey barriers. A collector trench area will capture leach water and a pump will transport



it to the treatment system. The discharge points will also coincide with the locations of the treatment system as shown on Figure 2.

Please do not hesitate to contact the undersigned at (781) 278-3700 if you have any questions or require further information.

Very truly yours,

GZA GEOENVIRONMENTAL, INC.

Sowjanya Chintalapati Environmental Engineer I

Michele Simoneaux Project Manager Russell B. Parkman, P.E Consultant/Reviewer

Gregg McBride, LSP

Principal

#### Enclosures:

Attachment 1: NOI Form

Attachment 2: Figure 1 - Site Locus Map

Attachment 3: Figure 2 - Proposed Activity Plan of Lebanon Brook Area

Attachment 4: Figure 3 - Process Flow Diagram

Attachment 5: Laboratory Analytical Results

Attachment 6: Supplemental Information - 7Q10 data for Lebanon Brook

Attachment 7: Copy of a letter from Tribal Historic Preservation Officer

cc: Mr. John E. Rosenthal
MassDEP – Central Region
Nanda Thalisila, Chartis Insurance
Barbara Henning, Chartis Insurance

NOI FORM

# B. Suggested Form for Notice of Intent (NOI) for the Remediation General Permit

1. General site information. Please provide the following information about the site:

a) Name of facility/site: Brookside Terrace Apart	ments	Facility/site address: 11 Village Drive, Southbridge, MA 01550						
Location of <b>facility/site</b> : longitude: <u>-72° 00' 72"</u> latitude: <u>42° 06' 52"</u>	Facility SIC code	e(s):	Street: Village Drive					
b) Name of facility/site owner: Brookside Terrace	e Associates, LP		Town: Southbridge					
Email address of owner: JRosenthal@MeredithMa	anagement.com	State:	Zip:	County:				
Telephone no.of facility/site owner: (617) 365-220	00	MA	01550	Worcester				
Fax no. of facility/site owner: N/A		Owner is (check one): 1. Fed		i1				
Address of owner (if different from site):		3. Private <u>√</u> 4. other, if	so, describe:					
Street: One Bridge Street, Suite 300								
Town: Newton		State: MA	Zip: 02458	County: Middlesex				
c) Legal name of operator:		Operator telep	ephone no: (617) 965-2200					
Brookside Terrace Associates, LP		Operator fax 1	no.: N/A	Operator email: JRosenthal@MeredithManagement.com				
Operator contact name and title: John E. Rosenth	nal							
Address of operator (if different from owner):		Street:						
Town:	Town: State:							
d) Check "yes" or "no" for the following:  1. Has a prior NPDES permit exclusion been grante  2. Has a prior NPDES application (Form 1 & 2C) e  3. Is the discharge a "new discharge" as defined by 4  4. For sites in Massachusetts, is the discharge cover	ver been filed for the Ver been filed for the Ver 122.2? Yes	he discharge? Y es_✓_ No	es No <u>√</u> , if "yes," date a					

generation of dist If "yes," please li 1. site identificati 2. permit or licen 3. state agency co MA DEP Centra	charge? Yes \( \sqrt{1} \) ist: ion # assigned by t ise # assigned: RTI ontact information: al Regional Office	the state of NH or MA: MA	f) Is the site/facility covered by any other EPA permit, including:  1. multi-sector storm water general permit? Y N ✓ , if Y, number:  2. phase I or II construction storm water general permit? Y N ✓ ,  if Y, number:  3. individual NPDES permit? Y N ✓ , if Y, number:  4. any other water quality related permit? Y ✓ N , if Y, number:  In the application process of 404-Army Corp PGP-2, 401-WQC (dredging & fill / excavation), OOC Southbridge CC, MESA-NHESP, MEPA Certificate Permits.  ing additional sheets as needed) including:					
a) Describe the discharge activities for which the owner/applicant is seeking coverage:  During the Phase III Activities at the North bank of Lebanon Brook location, there is a likely need to discharge water generated from the dewatering of areas to be excavated.								
b) Provide the following information about each discharge:	following discharge points: Average flow 0.066 cfs Is maximum flow a design value? Y \( \sqrt{N} \) N  For average flow, include the units and appropriate notation if this value is a design value or estimate if not available.							
			'53"; pt.2: long72° 00' 21" lat. 42° 03' 52"; pt.3: long72° 00' 18" lat. 42° 03' 52"; ; pt.7: long lat; pt.8:long lat; etc.					
4) If hydrostatic	4) If hydrostatic testing, total volume of the discharge (gals):  5) Is the discharge intermittent or seasonal?  Is discharge ongoing Yes No ?							
c) Expected dates	c) Expected dates of discharge (mm/dd/yy): start_07/15/10 end_11/15/10							
· /	•	low schematic showing water flow through the faci buting flow from the operation, 3. treatment units,	•					

3. Contaminant information. In order to complete this section, the applicant will need to take a minimum of one sample of the untreated water and have it analyzed for all of the parameters listed in Appendix III. Historical data, (i.e., data taken no more than 2 years prior to the effective date of the permit) may be used if obtained pursuant to: i. Massachusetts' regulations 310 CMR 40.0000, the Massachusetts Contingency Plan ("Chapter 21E"); ii. New Hampshire's Title 50 RSA 485-A: Water Pollution and Waste Disposal or Title 50 RSA 485-C: Groundwater Protection Act; or iii. an EPA permit exclusion letter issued pursuant to 40 CFR 122.3, provided the data was analyzed with test methods that meet the requirements of this permit. Otherwise, a new sample shall be taken and analyzed.

a) Based on the analysis of the sample(s) of the untreated influent, the applicant must check the box of the sub-categories that the potential discharge falls within.

Gasoline Only	VOC Only	Primarily Metals	Urban Fill Sites	Contaminated Sumps	Mixed Contaminants	Aquifer Testing
Fuel Oils (and Other Oils) only	VOC with Other Contaminants ✓	Petroleum with Other Contaminants	Listed Contaminated Sites	Contaminated Dredge Condensates	Hydrostatic Testing of Pipelines/Tanks	Well Development or Rehabilitation

b) Based on the analysis of the untreated influent, the applicant must indicate whether each listed chemical is believed present or believed absent in the potential

discharge. Attach additional sheets as needed.

PARAMETER	Believe Absent	Believe Present	# of Samples	Type of Sample	Analytical Method	Minimum Level (ML) of	Maximum daily value		Avg. daily value	
			(1 min- imum)	(e.g., grab)	Used (method #)	Test Method	concentration (ug/l)	mass (kg)	concentration (ug/l)	mass (kg)
1. Total Suspended Solids		✓	2	grab	2540D	5,000	29,000		23,000	
2. Total Residual Chlorine		✓	2	grab	4500 CI D	20	120		90	
3. Total Petroleum Hydrocarbons	✓		2	grab	1664 A	5,000	BDL		BDL	
4. Cyanide	✓		2	grab	4500 CN CE	5	BDL		BDL	
5. Benzene	✓		2	grab	8260	1	BDL		BDL	
6. Toluene	✓		2	grab	8260	1	BDL		BDL	
7. Ethylbenzene	✓		2	grab	8260	1	BDL		BDL	
8. (m,p,o) Xylenes	✓		2	grab	8260	3	BDL		BDL	
9. Total BTEX <sup>4</sup>	✓		2	grab	8260	6	BDL		BDL	

<sup>&</sup>lt;sup>4</sup>BTEX = Sum of Benzene, Toluene, Ethylbenzene, total Xylenes.

PARAMETER	Believe Absent	Believe Present	# of Samples	Type of Sample (e.g.,	Analytical Method	Minimum Level (ML) of	Maximum daily	value	Avg. daily value	
			(1 min- imum)	grab)	Used (method #)	Test Method	concentration (ug/l)	mass (kg)	concentration (ug/l)	mass (kg)
10. Ethylene Dibromide <sup>5</sup> (1,2- Dibromo-methane)	✓		2	grab	8260	2	BDL		BDL	
11. Methyl-tert-Butyl Ether (MtBE)	✓		2	grab	8260	1	BDL		BDL	
12. tert-Butyl Alcohol (TBA)	✓		2	grab	8260	25	BDL		BDL	
13. tert-Amyl Methyl Ether (TAME)	✓		2	grab	8260	2	BDL		BDL	
14. Naphthalene	✓		2	grab	8260	2	BDL		BDL	
15. Carbon Tetra- chloride	✓		2	grab	8260	1	BDL		BDL	
16. 1,4 Dichlorobenzene	✓		2	grab	8260	1	BDL		BDL	
17. 1,2 Dichlorobenzene	✓		2	grab	8260	1	BDL		BDL	
18. 1,3 Dichlorobenzene	✓		2	grab	8260	1	BDL		BDL	
19. 1,1 Dichloroethane	✓		2	grab	8260	1	BDL		BDL	
20. 1,2 Dichloroethane	✓		2	grab	8260	1	BDL		BDL	
21. 1,1 Dichloroethylene	✓		2	grab	8260	1	BDL		BDL	
22. cis-1,2 Dichloro- ethylene	✓		2	grab	8260	1	BDL		BDL	
23. Dichloromethane (Methylene Chloride)	✓		2	grab	8260	2	BDL		BDL	
24. Tetrachloroethylene	✓		2	grab	8260	1	BDL		BDL	

 $<sup>^5\</sup>mathrm{EDB}$  is a groundwater contaminant at fuel spill and pesticide application sites in New England.

PARAMETER	Believe Absent	Believe Present	# of Samples	Type of Sample (e.g.,	Analytical Method Used	Minimum Level (ML) of Test	Maximum daily v	alue	Avg. daily Value	e
			(1 min- imum)	grab)	(method #)	Method	concentration (ug/l)	mass (kg)	concentration (ug/l)	mass (kg)
25. 1,1,1 Trichloroethane	✓		2	grab	8260	1	BDL		BDL	
26. 1,1,2 Trichloroethane	✓		2	grab	8260	1	BDL		BDL	
27. Trichloroethylene	✓		2	grab	8260	1	BDL		BDL	
28. Vinyl Chloride	✓		2	grab	8260	1	BDL		BDL	
29. Acetone	✓		2	grab	8260	25	BDL		BDL	
30. 1,4 Dioxane	✓		2	grab	8260	100	BDL		BDL	
31. Total Phenols	✓		2	grab	8270-Low	180	BDL		BDL	
32. Pentachlorophenol	✓		2	grab	8270-Low	10	BDL		BDL	
33. Total Phthalates <sup>6</sup> (Phthalate esthers)	✓		2	grab	8270-Low	81	BDL		BDL	
34. Bis (2-Ethylhexyl) Phthalate [Di- (ethylhexyl) Phthalate]	✓		2	grab	8270-Low	1	BDL		BDL	
35. Total Group I Polycyclic Aromatic Hydrocarbons (PAH)										
a. Benzo(a) Anthracene		✓	2	grab	8270-Low	0.05	0.38		0.32	
b. Benzo(a) Pyrene		✓	2	grab	8270-Low	0.1	0.29		0.22	
c. Benzo(b)Fluoranthene		✓	2	grab	8270-Low	0.05	0.53		0.43	
d. Benzo(k) Fluoranthene		✓	2	grab	8270-Low	0.2	0.27		0.13	
e. Chrysene		✓	2	grab	8270-Low	0.2	0.38		0.3	

<sup>&</sup>lt;sup>6</sup>The sum of individual phthalate compounds.

PARAMETER	Believe Absent	Believe Present	# of Samples	Type of Sample (e.g.,	Analytical Method Used	Minimum Level (ML) of	Maximum daily v	alue	Average daily va	lue
			(1 min- imum)	grab)	(method #)	Test Method	concentration (ug/l)	mass (kg)	concentration (ug/l)	mass (kg)
f. Dibenzo(a,h) anthracene	✓		2	grab	8270-Low	0.2	BDL		BDL	
g. Indeno(1,2,3-cd) Pyrene		✓	2	grab	8270-Low	0.2	0.28		0.14	
36. Total Group II Polycyclic Aromatic Hydrocarbons (PAH)										
h. Acenaphthene	✓		2	grab	8270-Low	0.3	BDL		BDL	
i. Acenaphthylene	✓		2	grab	8270-Low	0.3	BDL		BDL	
j. Anthracene		✓	2	grab	8270-Low	0.2	0.26		0.13	
k. Benzo(ghi) Perylene	✓			grab	8270-Low	0.05	BDL		BDL	
l. Fluoranthene		✓	2	grab	8270-Low	0.5	1.46		1.09	
m. Fluorene	✓		2	grab	8270-Low	1	BDL		BDL	
n. Naphthalene-	✓		2	grab	8270-Low	1	BDL		BDL	
o. Phenanthrene			2	grab	8270-Low	0.05	1.35		1.08	
p. Pyrene	✓		2	grab	8270-Low	1	BDL		BDL	
37. Total Polychlorinated Biphenyls (PCBs)		✓	2	grab	608	0.10	0.43		0.41	
38. Antimony	✓		2	grab	6010B	25	BDL		BDL	
39. Arsenic	✓		2	grab	6010B	5	BDL		BDL	
40. Cadmium	✓		2	grab	6010B	5	BDL		BDL	
41. Chromium III		✓	2	grab	6010B	5	6		3	
42. Chromium VI	✓		2	grab	SM 3500 Cr D	10	BDL		BDL	

PARAMETER	Believe Absent	Believe Present	# of Samples	Type of Sample (e.g.,	Analytical Method	Minimum Level (ML) of	Maximum daily	value	Avg. daily value	
			(1 min- imum)	grab)	Used (method #)	Test Method	concentration (ug/l)	mass (kg)	concentration (ug/l)	mass (kg)
43. Copper		✓	2	grab	6010B	5	24		23.5	
44. Lead		✓	2	grab	6010B	10	24		20.5	
45. Mercury	✓		2	grab	7470A	0.2	BDL		BDL	
46. Nickel	✓		2	grab	6010B	10	BDL		BDL	
47. Selenium	✓		2	grab	6010B	25	BDL		BLD	
48. Silver	✓		2	grab	6010B	5	BDL		BDL	
49. Zinc		✓	2	grab	6010B	10	47		43	
50. Iron		✓	2	grab	6010B	25	1,900		1,420	
Other (describe):										

c) For discharges where **metals** are believed present, please fill out the following:

Step 1: Do any of the metals in the influent have a <b>reasonable potential</b> to exceed the effluent limits in Appendix III (i.e., the limits set at zero to five dilutions)? $Y_{\underline{\checkmark}} N_{}$	If yes, which metals? Copper (Cu), Lead (Pb), Iron (Fe).
Step 2: For any metals which have reasonable potential to exceed the Appendix III limits, calculate the dilution factor (DF) using the formula in Part I.A.3.c) (step 2) of the NOI instructions or as determined by the State prior to the submission of this NOI.  What is the dilution factor for applicable metals?  Metals: Copper (Cu), Lead (Pb), Iron (Fe).  DF: 1.63	Look up the limit calculated at the corresponding dilution factor in <b>Appendix IV.</b> Do any of the metals in the <b>influent</b> have the potential to exceed the corresponding <b>effluent</b> limits in Appendix IV (i.e., is the influent concentration above the limit set at the calculated dilution factor)?  Y N If "Yes," list which metals: Copper (Cu), Lead (Pb), Iron (Fe).

4. Treatment system information. Please describe the treatment system using separate sheets as necessary, including:										
a) A description of the treatm	ent system, inc	luding a schematic	c of the	proposed or ex	cisting treatment syste	em:				
b) Identify each applicable	Frac. tank	Air stripper		Oil/water sep	arator	Equalization tanks		Bag filter 🗸		GAC filter <b>✓</b>
treatment unit (check all that apply):	Chlorination	Dechlorination	on	Other (please	e describe):					
c) Proposed <b>average</b> and <b>maximum flow rates</b> (gallons per minute) for the discharge and the <b>design flow rate</b> (s) (gallons per minute) of the treatment system:  Average flow rate of discharge 30 gpm. Maximum flow rate of treatment system 100 gpm Design flow rate of treatment system 100 gpm										
d) A description of chemical	additives being	used or planned to	o be us	ed (attach MSI	S sheets): None					
5. Receiving surface water(s). Please provide information about the receiving water(s), using separate sheets as necessary:										
a) Identify the discharge path	way:	Direct	With	in facility	Storm drain	River/brook	Wet	lands	Oth	her (describe):
b) Provide a narrative descrip Treated water discharges v							k to C	Quinebaug Riv	er.	
c) Attach a detailed map(s) in 1. For multiple discharges, no 2. For indirect dischargers, in The map should also include mapping), such as surface wa	umber the disch dicate the locat the location and ters, drinking v	arges sequentially. ion of the discharged distance to the new vater supplies, and	ge to the earest so	ne indirect conv sanitary sewer a nd areas.	eyance and the dischas well as the locus of	nearby sensitive recep			topo	ographical
d) Provide the state water quality classification of the receiving water Class B (Lebanon Brook a tributary of Quinebaug River.).										
e) Provide the reported or calculated seven day-ten year low flow (7Q10) of the receiving water 0.14cfs  Please attach any calculation sheets used to support stream flow and dilution calculations.										
f) Is the receiving water a listed 303(d) water quality impaired or limited water? Yes No_ <a href="Ves">Ves</a> If yes, for which pollutant(s)? Is there a TMDL? Yes No_ <a href="Ves">Ves</a> _ If yes, for which pollutant(s)?										

6. Results of Consultation with Federal Services: Please provide the following information according to requirements of Part I.B.4 and Appendices II and VII.
a) Are any listed threatened or endangered species, or designated critical habitat, in proximity to the discharge? Yes V No National Heritage Endangered Species Program Review Has any consultation with the federal services been completed? Yes No V or is consultation underway? Yes V No 2000 No
b) Are any historic properties listed or eligible for listing on the National Register of Historic Places located on the facility or site or in proximity to the discharge?  Yes No ✓ Have any state or tribal historic preservation officer been consulted in this determination (Massachusetts only)? Yes ✓ No
Attached is a copy of letter 7. Supplemental information. :
Please provide any supplemental information. Attach any analytical data used to support the application. Attach any certification(s) required by the general permit.
8. Signature Requirements: The Notice of Intent must be signed by the operator in accordance with the signatory requirements of 40 CFR Section 122.22, including the following certification:  I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, I certify that the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I certify that I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.
Facility/Site Name: Brookside Terrace Apartments
Operator signature:
Title:
Date:

FIGURE 1 – SITE LOCUS MAP

T:\GISDATA\Massgis\Templates\SiteLocus\_Template\_Final-XP\_v9.mxd

FIGURE 2 – PROPOSED ACTIVITY PLAN OF LEBANON BROOK AREA

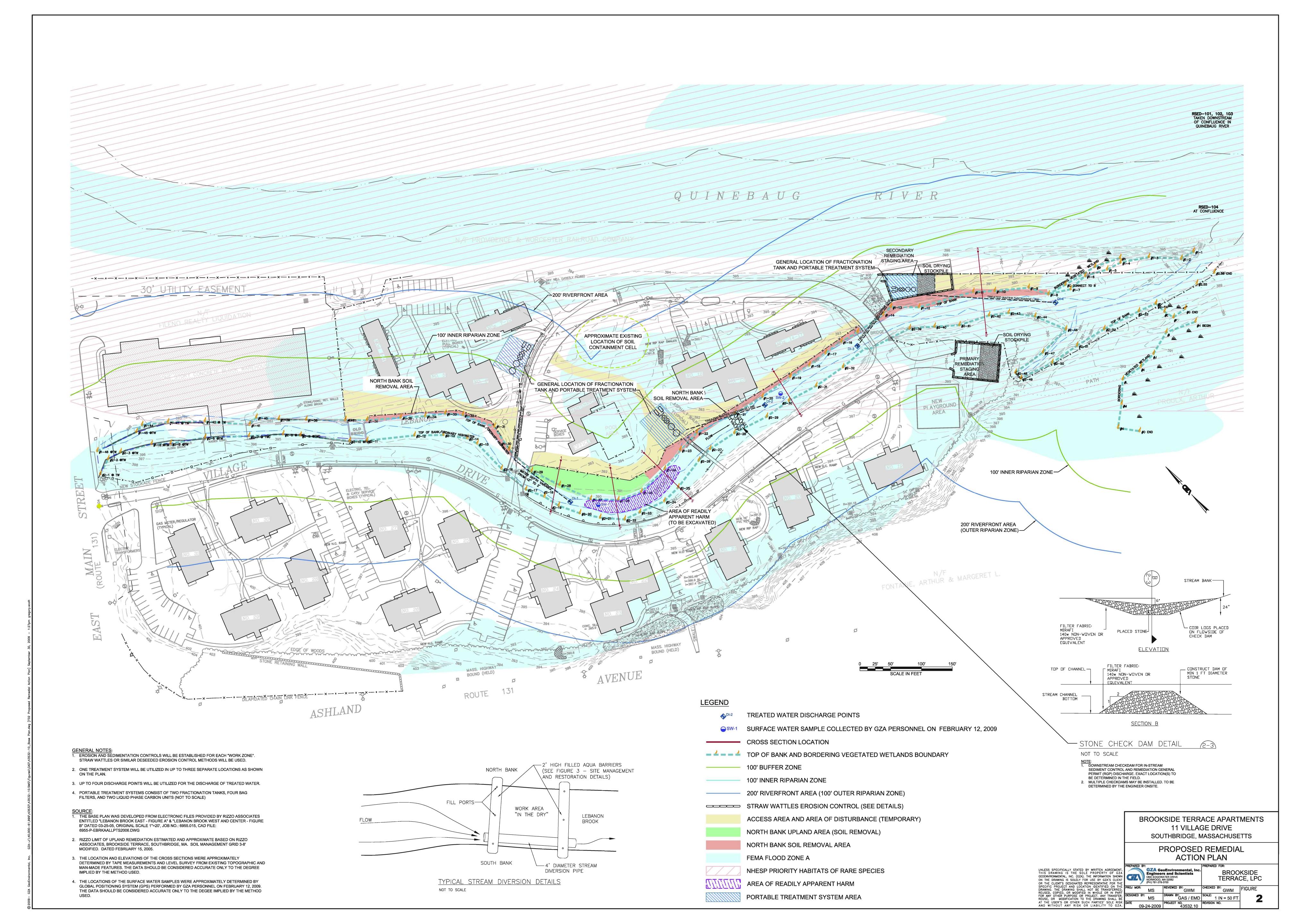


FIGURE 3 – PROCESS FLOW DIAGRAM

LABORATORY ANALYTICAL RESULTS



Laboratory Identification Numbers:
MA and ME: MA092 NH: 2028
CT: PH0579 RI: LAO00236
NELAC - NYS DOH: 11063

#### ANALYTICAL REPORT

GZA GeoEnvironmental, Inc.
One Edgewater Drive
Norwood, MA 02062

Michele Simoneaux

Project No.: 01.0043532.10
Work Order No.: 0902-00051
Date Received: 02/13/2009
Date Reported: 02/23/2009

#### **SAMPLE INFORMATION**

Date Sampled	Matrix	Laboratory ID	Sample ID
02/12/2009	Aqueous	0902-00051 001	SW-1
02/12/2009	Aqueous	0902-00051 002	SW-1 Dissolved Metals
02/12/2009	Aqueous	0902-00051 003	SW-2





#### ANALYTICAL REPORT

GZA GeoEnvironmental, Inc. One Edgewater Drive Norwood, MA 02062

Michele Simoneaux

Project Name.: Brookside Terrace

Project No.: **01.0043532.10** 

Date Received:

02/13/2009

Date Reported:

02/23/2009

Work Order No.: 0902-00051

#### PROJECT NARRATIVE:

#### 1. Sample Receipt

The samples were received on 02/12/09 via \_\_GZA courier, \_\_EC, \_\_FEDEX, or \_\_x\_hand delivered. The samples were received intact for all requested analyses.

The following questions are answered upon sample receipt to determine compliance with MADEP Defined "Presumptive Certainty":

Were the samples received between 2-6 degrees C (Temperature = 3.9 degrees C)? (x) yes () no

\* The temperature requirement for most analyses is above freezing to 6 degrees C.

Were the samples received with method specific preservatives within holding time? (x) yes () no \* The chain of custody indicates that the samples, when required, were chemically preserved in accordance with the method they reference.

Were all constituents for the MCP Method(s) selected assigned on the COC?

() yes (x) no

- \* Full MCP14 Metals () yes (x) no () not assigned
- \* Full EPA 8270 SVOCs () yes (x) no () not assigned
- \* Full EPA 8260 or 8021 VOCs (x) yes () no () not assigned

#### 2. Subcontracted Analyses

Analyses for TOC were subcontracted to Rhode Island Analytical, Warwick RI (RIAL); Certification MA: MA-RI015, NH: 253700 A&B, CT: PH-0508, ME: RI015, RI: RI-033, NY:11726,

Analyses for TPH by 1664, TSS, Total Residual Chlorine, Cyanide and PCB's by 608 were subcontracted to ESS Laboratory, Cranston, RI.

Analyses for low level SVOC's were subcontracted to ConTest Analytical Laboratory, East Longmeadow, MA

The data is included in GZA's report for ease of electronic data transfer and is indicated by "XXX" in the tech column. The data report from the subcontractor is attached.

3. Method SM 18 3500 Cr(D) - Hexavalent Chromium

Attach QC 02/13/09

#### 4. EPA Method 6010B/7470A - Metals

All samples were pre-concentrated 5 times in order to reach the required reporting limits for As (0.005mg/L) and Cu (0.005 mg/L).

Attach QC 6010B 02/17/09 - Aqueous

Attach QC 7470A 02/18/09 - Aqueous

Attach QC 7470A 02/20/09 - Aqueous

#### 5. EPA Method 8260 - VOCs

The continuing calibration verification standard (CCV) (02/12/09 S) had an analyte outside of the 30%D QC acceptance limit. The outlier includes dichlorodifluoromethane (49%).

The Laboratory Control Sample (LCS) (02/12/09 S) had a MA MCP 8260 list analyte outside of the 70-130% QC acceptance limits. Specific outlier includes dichlorodifluoromethane (149%). This analyte was not detected in the associated samples.

The Laboratory Control Sample Duplicate (LCSD) (02/12/09 S) had a MA MCP 8260 list analyte outside of the 70-130% QC acceptance limits. Specific outlier includes dichlorodifluoromethane (152%).

Attach QC 8260 02/18/09 S - Aqueous



## ANALYTICAL REPORT

GZA GeoEnvironmental, Inc. One Edgewater Drive Norwood, MA 02062

Michele Simoneaux

Project Name.:

**Brookside Terrace** 

Project No.:

01.0043532.10

Date Received:

02/13/2009

Date Reported:

02/23/2009

Work Order No.: 0902-00051

Lab	oratory Name: G	ZA GeoEnviro	nmental, Inc.		Project #:	01	.0043532.10
Pro	ect Location: Br	ookside Terra	ce		MADEP R	TN¹:	
This	Form provides ce	rtifications for the f	ollowing data set:	list Laboratory	Sample ID	Numb	per(s)]
09	02-00051						
San	nple Matrices:	Groundwater : S	oil/Sediment 🐰 🗅	rinking Water	x Other: <u>5√</u>	Anei	wester
M	CP SW-846	8260B (X)	8151A()	8330()	6010B	()	7470A/1A 💢
	ethods Used	8270C()	8081A()	VPH()	6020	( )	9014M <sup>2</sup> ()
	pecified in MADEP	8082 ( )	8021B ( )	EPH()	7000 S <sup>3</sup>	( )	7196A ( )
Analy	pendium of /tical Methods. ck all that apply)	1 List Release Trac 2 M – SW-846 Meth 3 S – SW-846 Meth	od 9014 or MADEP	Physiologically.			(PAC) Method
An	affirmative respo	onse to questions	A, B, C and D is	required for "l	Presumptiv	e Cei	rtainty" status
A	Were all samples received by the laboratory in a condition consistent with that described on the Chain-of-Custody documentation for the data set?						
В	Were all QA/QC procedures required for the specified analytical method(s) included in this report followed, including the requirement to note and discuss in a narrative QC data that did not meet appropriate performance standards or guidelines?						
С	Does the data included in this report meet all the analytical requirements for "Presumptive Certainty", as described in Section 2.0 (a), (b), (c) and (d) of the MADEP document CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data"?						
D		Methods only: Wa					Yes ☐ No <sup>1</sup>
	A response to q	uestions E and F	below is required	d for "Presum <sub>i</sub>	otive Certai	inty"	status
E		cal QC performand ethods achieved?	e standards and	recommendatio	ons for	Ξ.	Yes X No <sup>1</sup>
F	Were results for method(s) report	or all analyte-list of ded?	compounds/eleme	nts for the spe	ecified	٥١	∕es X No¹
1 <sub>A</sub>	II Negative respor	nses must be addre	ssed in an attach	ed Environmen	tal Laborato	ry ca:	se narrative.
ngu	iry of those rea	ttest under the pa sponsible for ob- the best of my k	taining the info	mation, the i	material co	ontair	ny personal ned in this
Sigr	nature:		*	Position: La	aboratory	Sup	ervisor
	ted Name: And				5/09		



#### ANALYTICAL REPORT

GZA GeoEnvironmental, Inc. One Edgewater Drive Norwood, MA 02062

Michele Simoneaux

Project Name.: Brookside Terrace

Project No.: 01.0043532.10

Date Received:

02/13/2009

Date Reported: Work Order No.: 02/23/2009 0902-00051

#### LABORATORY STATEMENTS:

NELAC certification, as indicated by the NELAC ID Number, is per analyte. For a complete list of NELAC validated analytes, please contact the laboratory.

#### Abbreviations:

% R = % Recovery

DF = Dilution Factor

CF = Calculation Factor

DO = Diluted Out

#### Method Key:

Method 8260: The current version of the method is 8260B. Method 8270: The current version of the method is 8270D. Method 6010: The current version of the method is 6010B.

Soil data is reported on a dry weight basis unless otherwise specified.

Matrix Spike / Matrix Spike Duplicate sets are performed as per method and are reported at the end of the analytical report if assigned on the Chain of Custody.





#### ANALYTICAL REPORT

GZA GeoEnvironmental, Inc. One Edgewater Drive Norwood, MA 02062

Michele Simoneaux

Project Name.:

**Brookside Terrace** 

Project No.:

01.0043532.10

Date Received:
Date Reported:

02/13/2009

Work Order No.: 0902-00051

02/23/2009

Sample ID:

SW-1

Sample No.:

001

Sample Date:

Test Performed	Method	Results	Units	Tech	Analysis Date
VOLATILE ORGANICS	EPA 8260			MQS	02/18/2009
Dichlorodifluoromethane	EPA 8260	<2.0	ug/L	MQS	02/18/2009
Chloromethane	EPA 8260	<2.0	ug/L	MQS	02/18/2009
Vinyl Chloride	EPA 8260	<1.0	ug/L	MQS	02/18/2009
Bromomethane	EPA 8260	<2.0	ug/L	MQS	02/18/2009
Chloroethane	EPA 8260	<1.0	ug/L	MQS	02/18/2009
Trichlorofluoromethane	EPA 8260	<2.0	ug/L	MQS	02/18/2009
Diethylether	EPA 8260	<5.0	ug/L	MQS	02/18/2009
Acetone	EPA 8260	<25	ug/L	MQS	02/18/2009
1,1-Dichloroethene	EPA 8260	<1.0	ug/L	MQS	02/18/2009
Freon 113	EPA 8260	<2.0	ug/L	MQS	02/18/2009
Carbon Disulfide	EPA 8260	<50	ug/L	MQS	02/18/2009
Dichloromethane	EPA 8260	<2.0	ug/L	MQS	02/18/2009
tert-Butyl alcohol (TBA)	EPA 8260	<25	ug/L	MQS	02/18/2009
Methyl-Tert-Butyl-Ether	EPA 8260	<1.0	ug/L	MQS	02/18/2009
trans-1,2-Dichloroethene	EPA 8260	<1.0	ug/L	MQS	02/18/2009
1,1-Dichloroethane	EPA 8260	<1.0	ug/L	MQS	02/18/2009
Di-isopropyl ether (DIPE)	EPA 8260	<2.0	ug/L	MQS	02/18/2009
Ethyl tert-butyl ether ETBE	EPA 8260	<2.0	ug/L	MQS	02/18/2009
2-Butanone	EPA 8260	<25	ug/L	MQS	02/18/2009
2,2-Dichloropropane	EPA 8260	<1.0	ug/L	MQS	02/18/2009
cis-1,2-Dichloroethene	EPA 8260	<1.0	ug/L	MQS	02/18/2009
Chloroform	EPA 8260	<1.0	ug/L	MQS	02/18/2009
Bromochloromethane	EPA 8260	<1.0	ug/L	MQS	02/18/2009
Tetrahydrofuran	EPA 8260	<10	ug/L	MQS	02/18/2009
1,1,1-Trichloroethane	EPA 8260	<1.0	ug/L	MQS	02/18/2009
1,1-Dichloropropene	EPA 8260	<1.0	ug/L	MQS	02/18/2009
Carbon Tetrachloride	EPA 8260	<1.0	ug/L	MQS	02/18/2009
1,2-Dichloroethane	EPA 8260	<1.0	ug/L	MQS	02/18/2009
Benzene	EPA 8260	<1.0	ug/L	MQS	02/18/2009
tert-Amyl methyl ether TAME	EPA 8260	<2.0	ug/L	MQS	02/18/2009
Trichloroethene	EPA 8260	<1.0	ug/L	MQS	02/18/2009
1,4-Dioxane	EPA 8260	<100	ug/L	MQS	02/18/2009
1,2-Dichloropropane	EPA 8260	<1.0	ug/L	MQS	02/18/2009
Bromodichloromethane	EPA 8260	<1.0	ug/L	MQS	02/18/2009
Dibromomethane	EPA 8260	<1.0	ug/L	MQS	02/18/2009
4-Methyl-2-Pentanone	EPA 8260	<25	ug/L	MQS	02/18/2009





#### ANALYTICAL REPORT

GZA GeoEnvironmental, Inc. One Edgewater Drive Norwood, MA 02062

Michele Simoneaux

Project Name.: Project No.:

**Brookside Terrace** 

01.0043532.10

Date Received:

02/13/2009

Date Reported:

02/23/2009 Work Order No.: 0902-00051

Sample ID:

**SW-1** 

Sample No.: 001

Sample Date:

Test Performed	Method	Results	Units	Tech	Analysis Date
cis-1,3-Dichloropropene	EPA 8260	<1.0	ug/L	MQS	02/18/2009
Toluene	EPA 8260	<1.0	ug/L	MQS	02/18/2009
trans-1,3-Dichloropropene	EPA 8260	<2.0	ug/L	MQS	02/18/2009
1,1,2-Trichloroethane	EPA 8260	<1.0	ug/L	MQS	02/18/2009
2-Hexanone	EPA 8260	<25	ug/L	MQS	02/18/2009
1,3-Dichloropropane	EPA 8260	<1.0	ug/L	MQS	02/18/2009
Tetrachloroethene	EPA 8260	<1.0	ug/L	MQS	02/18/2009
Dibromochloromethane	EPA 8260	<1.0	ug/L	MQS	02/18/2009
1,2-Dibromoethane (EDB)	EPA 8260	<2.0	ug/L	MQS	02/18/2009
Chlorobenzene	EPA 8260	<1.0	ug/L	MQS	02/18/2009
1,1,1,2-Tetrachloroethane	EPA 8260	<1.0	ug/L	MQS	02/18/2009
Ethylbenzene	EPA 8260	<1.0	ug/L	MQS	02/18/2009
m&p-Xylene	EPA 8260	<2.0	ug/L	MQS	02/18/2009
o-Xylene	EPA 8260	<1.0	ug/L	MQS	02/18/2009
Styrene	EPA 8260	<1.0	ug/L	MQS	02/18/2009
Bromoform	EPA 8260	<2.0	ug/L	MQS	02/18/2009
Isopropylbenzene	EPA 8260	<1.0	ug/L	MQS	02/18/2009
1,1,2,2-Tetrachloroethane	EPA 8260	<1.0	ug/L	MQS	02/18/2009
1,2,3-Trichloropropane	EPA 8260	<1.0	ug/L	MQS	02/18/2009
Bromobenzene	EPA 8260	<1.0	ug/L	MQS	02/18/2009
N-Propylbenzene	EPA 8260	<1.0	ug/L	MQS	02/18/2009
2-Chlorotoluene	EPA 8260	<1.0	ug/L	MQS	02/18/2009
1,3,5-Trimethylbenzene	EPA 8260	<1.0	ug/L	MQS	02/18/2009
4-Chlorotoluene	EPA 8260	<1.0	ug/L	MQS	02/18/2009
tert-Butylbenzene	EPA 8260	<1.0	ug/L	MQS	02/18/2009
1,2,4-Trimethylbenzene	EPA 8260	<1.0	ug/L	MQS	02/18/2009
sec-Butylbenzene	EPA 8260	<1.0	ug/L	MQS	02/18/2009
p-Isopropyltoluene	EPA 8260	<1.0	ug/L	MQS	02/18/2009
1,3-Dichlorobenzene	EPA 8260	<1.0	ug/L	MQS	02/18/2009
1,4-Dichlorobenzene	EPA 8260	<1.0	ug/L	MQS	02/18/2009
n-Butylbenzene	EPA 8260	<1.0	ug/L	MQS	02/18/2009
1,2-Dichlorobenzene	EPA 8260	<1.0	ug/L	MQS	02/18/2009
1,2-Dibromo-3-Chloropropane	EPA 8260	<5.0	ug/L	MQS	02/18/2009
1,2,4-Trichlorobenzene	EPA 8260	<1.0	ug/L	MQS	02/18/2009
Hexachlorobutadiene	EPA 8260	<1.0	ug/L	MQS	02/18/2009
Naphthalene	EPA 8260	<2.0	ug/L	MQS	02/18/2009
1,2,3-Trichlorobenzene	EPA 8260	<1.0	ug/L	MQS	02/18/2009





## ANALYTICAL REPORT

GZA GeoEnvironmental, Inc. One Edgewater Drive Norwood, MA 02062

Michele Simoneaux

Project Name.: Project No.:

**Brookside Terrace** 

01.0043532.10

Date Received:

02/13/2009

Date Reported: Work Order No.:

02/23/2009 0902-00051

Sample ID:

SW-1

Sample No.: 001

Sample Date:

Test Performed	Method	Results	Units	Tech	Analysis Date
Surrogates:	EPA 8260				
***1,2-Dichloroethane-D4	EPA 8260	91.0	% R	MQS	02/18/2009
***Toluene-D8	EPA 8260	99.3	% R	MQS	02/18/2009
***4-Bromofluorobenzene	EPA 8260	100	% R	MQS	02/18/2009
Preparation	EPA 5030B	1.0	CF	MQS	02/18/2009
METALS					
Antimony	EPA 6010B	<0.025	mg/L	LLZ	02/18/2009
Arsenic	EPA 6010B	<0.0050	mg/L	LLZ	02/18/2009
Cadmium	EPA 6010B	<0.0050	mg/L	LLZ	02/18/2009
Chromium	EPA 6010B	<0.0050	mg/L	LLZ	02/18/2009
Lead	EPA 6010B	0.017	mg/L	LLZ	02/18/2009
Nickel	EPA 6010B	<0.0010	mg/L	LLZ	02/18/2009
Selenium	EPA 6010B	<0.025	mg/L	LLZ	02/18/2009
Silver	EPA 6010B	<0.0050	mg/L	LLZ	02/18/2009
Zinc	EPA 6010B	0.039	mg/L	LLZ	02/18/2009
Iron	EPA 6010B	0.94	mg/L	LLZ	02/18/2009
Mercury	EPA 7470A	<0.00020	mg/L	TN	02/20/2009
Hexavalent Chromium	SM 3500CrD	<0.010	mg/L	LLZ	02/13/2009
Copper	EPA 6010B	0.023	mg/L	LLZ	02/18/2009
SUBCONTRACTED ANALYTES					
Total Suspended Solids	SM-2540D	17	mg/L	XXX	02/12/2009
Residual Chlorine	SM4500-CI D	0.12	mg/L	XXX	02/13/2009
TPH via Method 1664	EPA 1664A	<5	mg/L	XXX	02/20/2009
Total Cyanide POLYCHLORINATED BIPHENYLS	SM 4500 CN CE EPA 608	<0.0050	mg/L	XXX	02/17/2009
Total Organic Carbon	SM-5310B	7	mg/L	XXX	02/17/2009





#### ANALYTICAL REPORT

GZA GeoEnvironmental, Inc. One Edgewater Drive Norwood, MA 02062

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01.0043532.10

Date Received:

02/13/2009

Date Reported:

02/23/2009

Work Order No.:

0902-00051

Sample ID:

**SW-1** Dissolved Metals

Sample No.: 002

Sample Date:

Test Performed	Method	Results	Units	Tech	Analysis Date
DISSOLVED METALS					
Antimony	EPA 6010B	<0.025	mg/L	LLZ	02/18/2009
Arsenic	EPA 6010B	< 0.0050	mg/L	LLZ	02/18/2009
Cadmium	EPA 6010B	< 0.0050	mg/L	LLZ	02/18/2009
Chromium	EPA 6010B	< 0.0050	mg/L	LLZ	02/18/2009
Copper	EPA 6010B	0.012	mg/L	LLZ	02/18/2009
Lead	EPA 6010B	<0.010	mg/L	LLZ	02/18/2009
Nickel	EPA 6010B	<0.010	mg/L	LLZ	02/18/2009
Selenium	EPA 6010B	<0.025	mg/L	LLZ	02/18/2009
Silver	EPA 6010B	<0.0050	mg/L	LLZ	02/18/2009
Zinc	EPA 6010B	0.015	mg/L	LLZ	02/18/2009
Iron	EPA 6010B	0.24	mg/L	LLZ	02/18/2009
Mercury	EPA 7470A	<0.00020	mg/L	TN	02/18/2009





#### ANALYTICAL REPORT

GZA GeoEnvironmental, Inc. One Edgewater Drive Norwood, MA 02062

Michele Simoneaux

Project Name.: Project No.: Brookside Terrace

01.0043532.10

Date Received:

02/13/2009

Date Reported:

02/23/2009

Work Order No.:

0902-00051

Sample ID:

SW-2

Sample No.: 003

Sample Date:

Test Performed	Method	Results	Units	Tech	Analysis Date
VOLATILE ORGANICS	EPA 8260			MQS	02/18/2009
Dichlorodifluoromethane	EPA 8260	<2.0	ug/L	MQS	02/18/2009
Chloromethane	EPA 8260	<2.0	ug/L	MQS	02/18/2009
Vinyl Chloride	EPA 8260	<1.0	ug/L	MQS	02/18/2009
Bromomethane	EPA 8260	<2.0	ug/L	MQS	02/18/2009
Chloroethane	EPA 8260	<1.0	ug/L	MQS	02/18/2009
Trichlorofluoromethane	EPA 8260	<2.0	ug/L	MQS	02/18/2009
Diethylether	EPA 8260	<5.0	ug/L	MQS	02/18/2009
Acetone	EPA 8260	<25	ug/L	MQS	02/18/2009
1,1-Dichloroethene	EPA 8260	<1.0	ug/L	MQS	02/18/2009
Freon 113	EPA 8260	<2.0	ug/L	MQS	02/18/2009
Carbon Disulfide	EPA 8260	<50	ug/L	MQS	02/18/2009
Dichloromethane	EPA 8260	<2.0	ug/L	MQS	02/18/2009
tert-Butyl alcohol (TBA)	EPA 8260	<25	ug/L	MQS	02/18/2009
Methyl-Tert-Butyl-Ether	EPA 8260	<1.0	ug/L	MQS	02/18/2009
trans-1,2-Dichloroethene	EPA 8260	<1.0	ug/L	MQS	02/18/2009
1,1-Dichloroethane	EPA 8260	<1.0	ug/L	MQS	02/18/2009
Di-isopropyl ether (DIPE)	EPA 8260	<2.0	ug/L	MQS	02/18/2009
Ethyl tert-butyl ether ETBE	EPA 8260	<2.0	ug/L	MQS	02/18/2009
2-Butanone	EPA 8260	<25	ug/L	MQS	02/18/2009
2,2-Dichloropropane	EPA 8260	<1.0	ug/L	MQS	02/18/2009
cis-1,2-Dichloroethene	EPA 8260	<1.0	ug/L	MQS	02/18/2009
Chloroform	EPA 8260	<1.0	ug/L	MQS	02/18/2009
Bromochloromethane	EPA 8260	<1.0	ug/L	MQS	02/18/2009
Tetrahydrofuran	EPA 8260	<10	ug/L	MQS	02/18/2009
1,1,1-Trichloroethane	EPA 8260	<1.0	ug/L	MQS	02/18/2009
1,1-Dichloropropene	EPA 8260	<1.0	ug/L	MQS	02/18/2009
Carbon Tetrachloride	EPA 8260	<1.0	ug/L	MQS	02/18/2009
1,2-Dichloroethane	EPA 8260	<1.0	ug/L	MQS	02/18/2009
Benzene	EPA 8260	<1.0	ug/L	MQS	02/18/2009
tert-Amyl methyl ether TAME	EPA 8260	<2.0	ug/L	MQS	02/18/2009
Trichloroethene	EPA 8260	<1.0	ug/L	MQS	02/18/2009
1,4-Dioxane	EPA 8260	<100	ug/L	MQS	02/18/2009
1,2-Dichloropropane	EPA 8260	<1.0	ug/L	MQS	02/18/2009
Bromodichloromethane	EPA 8260	<1.0	ug/L	MQS	02/18/2009
Dibromomethane	EPA 8260	<1.0	ug/L	MQS	02/18/2009
4-Methyl-2-Pentanone	EPA 8260	<25	ug/L	MQS	02/18/2009





#### ANALYTICAL REPORT

GZA GeoEnvironmental, Inc. One Edgewater Drive Norwood, MA 02062

Michele Simoneaux

Project Name.: Project No.:

**Brookside Terrace** 01.0043532.10

Date Received: Date Reported: 02/13/2009 02/23/2009

Work Order No.:

0902-00051

Sample ID:

SW-2

Sample No.: 003

**Analysis** 

Sample Date:

Test Performed	Method	Results	Units	Tech	Analysis Date
cis-1,3-Dichloropropene	EPA 8260	<1.0	ug/L	MQS	02/18/2009
Toluene	EPA 8260	<1.0	ug/L	MQS	02/18/2009
trans-1,3-Dichloropropene	EPA 8260	<2.0	ug/L	MQS	02/18/2009
1,1,2-Trichloroethane	EPA 8260	<1.0	ug/L	MQS	02/18/2009
2-Hexanone	EPA 8260	<25	ug/L	MQS	02/18/2009
1,3-Dichloropropane	EPA 8260	<1.0	ug/L	MQS	02/18/2009
Tetrachloroethene	EPA 8260	<1.0	ug/L	MQS	02/18/2009
Dibromochloromethane	EPA 8260	<1.0	ug/L	MQS	02/18/2009
1,2-Dibromoethane (EDB)	EPA 8260	<2.0	ug/L	MQS	02/18/2009
Chlorobenzene	EPA 8260	<1.0	ug/L	MQS	02/18/2009
1,1,1,2-Tetrachloroethane	EPA 8260	<1.0	ug/L	MQS	02/18/2009
Ethylbenzene	EPA 8260	<1.0	ug/L	MQS	02/18/2009
m&p-Xylene	EPA 8260	<2.0	ug/L	MQS	02/18/2009
o-Xylene	EPA 8260	<1.0	ug/L	MQS	02/18/2009
Styrene	EPA 8260	<1.0	ug/L	MQS	02/18/2009
Bromoform	EPA 8260	<2.0	ug/L	MQS	02/18/2009
Isopropylbenzene	EPA 8260	<1.0	ug/L	MQS	02/18/2009
1,1,2,2-Tetrachloroethane	EPA 8260	<1.0	ug/L	MQS	02/18/2009
1,2,3-Trichloropropane	EPA 8260	<1.0	ug/L	MQS	02/18/2009
Bromobenzene	EPA 8260	<1.0	ug/L	MQS	02/18/2009
N-Propylbenzene	EPA 8260	<1.0	ug/L	MQS	02/18/2009
2-Chlorotoluene	EPA 8260	<1.0	ug/L	MQS	02/18/2009
1,3,5-Trimethylbenzene	EPA 8260	<1.0	ug/L	MQS	02/18/2009
4-Chlorotoluene	EPA 8260	<1.0	ug/L	MQS	02/18/2009
tert-Butylbenzene	EPA 8260	<1.0	ug/L	MQS	02/18/2009
1,2,4-Trimethylbenzene	EPA 8260	<1.0	ug/L	MQS	02/18/2009
sec-Butylbenzene	EPA 8260	<1.0	ug/L	MQS	02/18/2009
p-Isopropyltoluene	EPA 8260	<1.0	ug/L	MQS	02/18/2009
1,3-Dichlorobenzene	EPA 8260	<1.0	ug/L	MQS	02/18/2009
1,4-Dichlorobenzene	EPA 8260	<1.0	ug/L	MQS	02/18/2009
n-Butylbenzene	EPA 8260	<1.0	ug/L	MQS	02/18/2009
1,2-Dichlorobenzene	EPA 8260	<1.0	ug/L	MQS	02/18/2009
1,2-Dibromo-3-Chloropropane	EPA 8260	<5.0	ug/L	MQS	02/18/2009
1,2,4-Trichlorobenzene	EPA 8260	<1.0	ug/L	MQS	02/18/2009
Hexachlorobutadiene	EPA 8260	<1.0	ug/L	MQS	02/18/2009
Naphthalene	EPA 8260	<2.0	ug/L	MQS	02/18/2009
1,2,3-Trichlorobenzene	EPA 8260	<1.0	ug/L	MQS	02/18/2009





#### ANALYTICAL REPORT

GZA GeoEnvironmental, Inc. One Edgewater Drive Norwood, MA 02062

Michele Simoneaux

Project Name.:

**Brookside Terrace** 

Project No.:

01.0043532.10

Date Received:

02/13/2009

Date Reported: Work Order No.:

02/23/2009 0902-00051

Sample ID:

SW-2

Sample No.: 003

Sample Date:

Test Performed	Method	Results	Units	Tech	Analysis Date
Surrogates:	EPA 8260				
***1,2-Dichloroethane-D4	EPA 8260	95.3	% R	MQS	02/18/2009
***Toluene-D8	EPA 8260	101	% R	MQS	02/18/2009
***4-Bromofluorobenzene	EPA 8260	101	% R	MQS	02/18/2009
Preparation	EPA 5030B	1.0	CF	MQS	02/18/2009
METALS					
Antimony	EPA 6010B	<0.025	mg/L	LLZ	02/18/2009
Arsenic	EPA 6010B	<0.0050	mg/L	LLZ	02/18/2009
Cadmium	EPA 6010B	<0.0050	mg/L	LLZ	02/18/2009
Chromium	EPA 6010B	0.0060	mg/L	LLZ	02/18/2009
Lead	EPA 6010B	0.024	mg/L	LLZ	02/18/2009
Nickel	EPA 6010B	<0.010	mg/L	LLZ	02/18/2009
Selenium	EPA 6010B	<0.025	mg/L	LŁZ	02/18/2009
Silver	EPA 6010B	<0.0050	mg/L	LLZ	02/18/2009
Zinc	EPA 6010B	0.047	mg/L	LLZ	02/18/2009
Iron	EPA 6010B	1.9	mg/L	LLZ	02/18/2009
Mercury	EPA 7470A	<0.00020	mg/L	TN	02/20/2009
Hexavalent Chromium	SM 3500CrD	<0.010	mg/L	LLZ	02/13/2009
Copper	EPA 6010B	0.024	mg/L	LLZ	02/18/2009
SUBCONTRACTED ANALYTES					
Total Suspended Solids	SM-2540D	29	mg/L	XXX	02/12/2009
Residual Chlorine	SM4500-CL,D	0.06	mg/L	XXX	02/13/2009
TPH via Method 1664	EPA 1664A	<5	mg/L	XXX	02/20/2009
Total Cyanide POLYCHLORINATED BIPHENYLS	SM 4500 CN CE EPA 608	<0.0050	mg/L	XXX	02/17/2009

#### EPA METHOD 7196A/SM 18 3500 CR (d) ANALYSIS Hexavalent Chromium by Colorometric Method

#### **QUALITY CONTROL - AQUEOUS**

Date Prepared: 02/13/09

QC Sample	Method Blank	Lab Control Sample	Lab Control Sample Duplicate	LC/LCD Difference
Units	mg/L	% Recovery	% Recovery	RPD
Acceptance Limits	Results	80-120	80-120	20%
Analyte				
Hex Cr (Cr+6)	< 0.010	100	90.0	10.5

RPD = Relative Percent Difference

# EPA METHOD 6010B ANALYSIS Metals by ICP

#### **QUALITY CONTROL - AQUEOUS**

DATE PREPARED: 2/17/2009

Units         mg/L         % Recovery         % Recovery         RPD           Acceptance Limits         Results         80-120         20%           Analyte         Silver (Ag)         <0.0050         102         98.5         3.37           Aluminum (Al)         NA         NA         NA         NA         NA           Arsenic (As)         <0.0050         105         104         0.89           Boron (B)         NA         NA         NA         NA           Boron (B)         NA         NA         NA         NA           Barium (Ba)         NA         NA         NA         NA           Beryllium (Be)         NA         NA         NA         NA           Beryllium (Ca)         NA         NA         NA         NA           Calcium (Ca)         NA         NA         NA         NA           Calcium (Cd)         <0.0050         99.3         98.6         0.66           Cobalt (Co)         NA         NA         NA         NA           Chromium (Cr)         <0.0050         103         101         1.13           Copper (Cu)         <0.0050         116         115         3.41	QC Sample	Method Blank	Lab Control Sample		LC/LCD Diff.
Acceptance Limits         Results         80-120         80-120         20%           Analyte         Silver (Ag)         <0.0050			_	_	
Analyte         Silver (Ag)         <0.0050         102         98.5         3.37           Aluminum (Al)         NA         NA         NA         NA           Arsenic (As)         <0.0050			•	•	
Silver (Ag)         <0.0050         102         98.5         3.37           Aluminum (Al)         NA         NA         NA         NA           Arsenic (As)         <0.0050		100010	00 120	00 120	2070
Aluminum (Al)         NA         NA         NA         NA           Arsenic (As)         <0.0050	•	< 0.0050	102	98.5	3.37
Arsenic (As)         <0.0050	. •				
Boron (B)         NA         NA         NA         NA           Barium (Ba)         NA         NA         NA         NA           Beryllium (Be)         NA         NA         NA         NA           Calcium (Ca)         NA         NA         NA         NA           Cadmium (Cd)         <0.0050	• ,				
Barium (Ba)         NA         NA         NA         NA           Beryllium (Be)         NA         NA         NA         NA           Calcium (Ca)         NA         NA         NA         NA           Cadmium (Cd)         <0.0050	` '				
Beryllium (Be)         NA         NA         NA         NA           Calcium (Ca)         NA         NA         NA         NA           Cadmium (Cd)         <0.0050	` '				
Calcium (Ca)         NA         NA         NA         NA           Cadmium (Cd)         <0.0050	` '				
Cadmium (Cd)         <0.0050         99.3         98.6         0.66           Cobalt (Co)         NA         NA         NA         NA           Chromium (Cr)         <0.0050	•				
Cobalt (Co)         NA         NA         NA         NA           Chromium (Cr)         <0.0050	` '				
Chromium (Cr)         <0.0050	` '				
Copper (Cu)         <0.0050         116         115         3.41           Iron (Fe)         <0.025	, ,				
Iron (Fe)         <0.025	` ,				
Magnesium (Mg)         NA         NA         NA         NA           Manganese (Mn)         NA         NA         NA         NA           Molybdenum (Mo)         NA         NA         NA         NA           Nickel (Ni)         <0.010	* * '	< 0.025	104	105	0.18
Manganese (Mn)         NA         NA         NA         NA           Molybdenum (Mo)         NA         NA         NA         NA           Nickel (Ni)         <0.010			NA	NA	NA
Molybdenum (Mo)         NA         NA         NA         NA           Nickel (Ni)         <0.010	•	NA	NA	NA	NA
Nickel (Ni)       <0.010	• • •	NA	NA	NA	NA
Antimony (Sb)       <0.025	• • •	< 0.010	103	103	0.10
Selenium (Se)         <0.025         105         105         0.16           Strontium (Sr)         NA         NA         NA         NA           Titanium (Ti)         NA         NA         NA         NA           Thallium (Tl)         NA         NA         NA         NA	Lead (Pb)	< 0.010	98.8	98.9	0.02
Strontium (Sr) NA NA NA NA Titanium (Ti) NA NA NA NA Thallium (Tl) NA NA NA NA	Antimony (Sb)	< 0.025	102	102	0.04
Titanium (Ti) NA NA NA NA NA Thallium (Tl) NA NA NA NA	Selenium (Se)	< 0.025	105	105	0.16
Thallium (Tl) NA NA NA NA	Strontium (Sr)	NA	NA	NA	NA
	Titanium (Ti)	NA	NA	NA	NA
Vanadium (V) NA NA NA NA	Thallium (Tl)	NA	NA	NA	NA
THINGHALL (T) 11/A 11/A 11/A 11/A	Vanadium (V)	NA	NA	NA	NA
Zinc (Zn) <0.010 110 106 3.80	Zinc (Zn)	< 0.010	110	106	3.80
Zirconium (Zr) NA NA NA NA	Zirconium (Zr)	NA	NA	NA	NA

Matrix Spike / Duplicate Spike performed as per method and reported if assigned on Chain of Custody.

# EPA METHOD 7470A ANALYSIS Mercury by Cold Vapor Atomic Absorption

#### **QUALITY CONTROL - AQUEOUS**

Date Prepared: 02/18/09

QC Sample	Method Blank	Lab Control Sample	Lab Control Sample Duplicate	LC/LCD Difference
Units	mg/L	% Recovery	% Recovery	RPD
Acceptance Limits	Results	80-120	80-120	20%
Analyte				
Mercury (Hg)	< 0.00020	83.7	86.0	2.71

RPD = Relative Percent Difference

#### EPA METHOD 7470A ANALYSIS Mercury by Cold Vapor Atomic Absorption

#### **QUALITY CONTROL - AQUEOUS**

Date Prepared: 02/20/09

QC Sample	Method Blank	Lab Control Sample	Lab Control Sample Duplicate	LC/LCD Difference
Units	mg/L	% Recovery	% Recovery	RPD
Acceptance Limits	Results	80-120	80-120	20%
Analyte				
Mercury (Hg)	< 0.00020	96.6	99.9	3.38

RPD = Relative Percent Difference

#### GZA GeoEnvironmental, Inc. 106 South Street Hopkinton, MA 01748

#### EPA Method 8260 / 524.2 Aqueous Method Blank (MB) and Laboratory Control Sample/Duplicate (LCS/LCSD) Data

Method Blank			Laboratory Control Sample				Laboratory Co	ntrol Sample Duplica	te			
Date Analyzed: Volatile Organics	2/18/2009 Conc. ug/L	Acceptance Limit	Date Analyzed: Spike Concentration = 20ug/L	2/18/2009 % Recovery	Acceptance Limits	Verdict	2/18/2009 % Recovery	Acceptance Limits	Verdict	RPD	Limit	Verdict
dichlorodifluoromethane	< 1.0	< 1.0	dichlorodifluoromethane	149	70-130	out	152	70-130	out	1.88	<25	ok
chioromethane	< 1.0	< 1.0	chioromethane	111	70-130	ok	115	70-130	ok	3.49	<25	ok
vinyl chloride	< 0.6	< 0.5	vinyl chloride	113	80-120	ok	114	70-130	ok	1.05	<25	ok
bromomethane	< 1.0	< 1.0	bromomethane	106	70-130	ok	107	70-130	ok	0.78	<25	ok
chloroethane	< 0.5	< 0.5	chloroethane	100	70-130	ok	99.7	70-130	ok	0.61	<25	ok
trichlorofluoromethane	< 1.0	< 1.0	trichlorofluoromethane	110	70-130	ok	112	70-130	ok	1.93	<26	ok
diethyl ether	< 2.6	< 2.5	diethyl ether	96.6	70-130	ok	95.9	70-130	ok	0.75	<25	ok
acetone	< 13	< 13	acetone	103	70-130	ok	110	70-130	ok	6.31	<25	ok
1,1-dichloroethene	< 0.6	< 0.5	1,1-dichloroethene	100	80-120	ok	102	70-130	ok	1.64	<25	ok
FREON-113	< 1.0	< 1.0	FREON-113	112 103	70-130 70-130	ok ok	113 102	70-130 70-130	ok ok	1.08 0.60	<25 <25	ok ok
iodomethane carbon disulfide	< 0.5 < 5.0	< 0.5 < 5.0	iodomethane carbon disulfide	130	70-130 70-130	out	130	70-130	ok	0.37	<25	ok
dichloromethane	< 1.0	< 1.0	dichioromethane	100	70-130	ok	101	70-130	ok	0.97	<25	ok
tert-butyl alcohol (TBA)	< 13	< 13	tert-butyl alcohol (TBA)	110	70-130	ok	112	70-130	ok	2.35	<25	ok
acrylonitrile	< 0.5	< 0.5	acrylonitrile	86.6	70-130	ok	84.0	70-130	ok	3.10	<25	ok
methyl-tert-butyl-ether	< 0.5	< 0.5	methyl-tert-butyl-ether	96.1	70-130	ok	103	70-130	ok	7.35	<25	ok
trans-1,2-dichloroethene	< 0.5	< 0.5	trans-1,2-dichloroethene	102	70-130	ok	102	70-130	ok	0.32	<25	ok
1,1-dichloroethane	< 0.5	< 0.5	1,1-dichloroethane	96.8	70-130	ok	98.3	70-130	ok	1.58	<25	ok
di-isopropyl ether (DIPE)	< 1.0	< 1.0	di-isopropyl ether (DIPE)	94.8	70-130	ok	96.3	70-130	ok	1.55	<25	ok
ethyl tert-butyl ether (EtBE)	< 1.0	< 1.0	ethyl tert-butyl ether (EtBE)	96.7	70-130	ok	98.2	70-130	ok	1.54	<25	ok
vinyl acetate	< 13	< 13	vinyl acetate	91.7	70-130	ok	93.3	70-130	ok	1.78	<25	ok
2-butanone	< 13	< 13	2-butanone	102	70-130	ok	99.5	70-130	ok	2.07	<25	ok
2,2-dichloropropane	< 0.5 < 0.5	< 0.5 < 0.5	2,2-dichloropropane	104 99,9	70-130 70-130	ok ok	101 101	70-130 70-130	ok ok	2.61 1.13	<25 <25	ok ok
cis-1,2-dichloroethene chloroform	< 0.5 < 0.5	< 0.5	cis-1,2-dichloroethene chloroform	96.1	80-120	ok	97.4	70-130	ok	1.13	<25	ok
bromochloromethane	< 0.5	< 0.5	bromochloromethane	105	70-130	ok	106	70-130	ok	0.26	<25	ok
tetrahydrofuran	< 5.0	< 5.0	tetrahydrofuran	112	70-130	ok	112	70-130	ok	0.26	<25	ok
1,1,1-trichloroethane	< 0.5	< 0.5	1,1,1-trichloroethane	96.5	70-130	ok	98.3	70-130	ok	1.88	<25	ok
1,1-dichloropropene	< 0.5	< 0.5	1,1-dichloropropene	101	70-130	ok	101	70-130	ok	0.18	<25	ok
carbon tetrachloride	< 0.5	< 0.5	carbon tetrachloride	102	70-130	ok	103	70-130	ok	1.56	<25	ok
1,2-dichloroethane	< 0.5	< 0.5	1,2-dichloroethane	99,6	70-130	ok	99.7	70-130	ok	0.05	<25	ok
benzene	< 0.5	< 0.5	benzene	99.7	70-130	ok	98.7	70-130	ok	1.01	<25	ok
tert-amyl methyl ether (TAME)	< 1.0	< 1.0	tert-amyl methyl ether (TAME)	102	70-130	ok	106	70-130	ok	3.21	<25	ok
trichloroethene	< 0.5	< 0.5	trichlomethene	103	70-130	ok	104	70-130	ok	0.20	<25	ok
1,2-dichloropropane	< 0.5	< 0.5	1,2-dichloropropane	95.7	80-120	ok	95.0	70-130	ok	0.77	<25	ok
bromodichloromethane	< 0.5	< 0.5	bromodichloromethane	98.9	70-130	ok	9,99	70-130	ok	1.02	<25	ok
1,4-Dioxane	< 50	< 50	1,4-Dioxane	97.8	70-130	ok	98.8	70-130	ok	1.03	<25	ok
dibromomethane	< 0.5	< 0.5 < 13	dibromomethane	106 97.3	70-130 70-130	ok ok	107 99.5	70-130 70-130	ok ok	0.16 2.25	<25 <25	ok ok
4-methyl-2-pentanone cis-1.3-dichloropropene	< 13 < 0.5		4-methyl-2-pentanone	104	70-130	ok	106	70-130	ok	1.71	<25	ok
toluene	< 0.5	< 0.5 < 0.5	cis-1,3-dichloropropene toluene	99.4	80-120	ok	100	70-130	ok	0.96	<25	ok
trans-1,3-dichloropropene	< 1.0	< 1.0	trans-1,3-dichloropropene	99.9	70-130	ok	101	70-130	ok	0.78	<25	ok
1,1,2-trichloroethane	< 0.5	< 0.5	1,1,2-trichloroethane	99,1	70-130	ok	98.0	70-130	ok	1.09	<25	ok
2-hexanone	< 13	< 13	2-hexanone	101	70-130	ok	102	70-130	ok	0.21	<25	ok
1,3-dichloropropane	< 0.5	< 0.5	1,3-dichloropropane	102	70-130	ok	102	70-130	ok	0.35	<25	ok
tetrachloroethene	< 0.5	< 0.5	tetrachloroethene	109	70-130	ok	108	70-130	ok	0.35	<25	ok
dibromochloromethane	< 0.5	< 0.5	dibromochloromethane	108	70-130	ok	107	70-130	ok	0.25	<25	ok
1,2-dibromoethane (EDB)	< 1.0	< 1.0	1,2-dibromoethane (EDB)	106	70-130	ok	106	70-130	ok	0.56	<25	ok
chlorobenzene	< 0.5	< 0.5	chlorobenzene	104	70-130	ok	103	70-130	ok	0.33	<25	ok
1,1,1,2-tetrachioroethane	< 0.5	< 0.5	1,1,1,2-tetrachioroethane	103	70-130	ok	102	70-130	ok	1.60	<25	ok
ethylbenzene	< 0.5	< 0.5	ethylbenzene	104	80-120 70-130	ok	105 102	70-130	ok	0.82 0.68	<25 <25	ok ok
1,1,2,2-tetrachloroethane	< 0.5 < 1.0	< 0.5 < 1.0	1,1,2,2-tetrachioroethane	101 100	70-130 70-130	ok ok	100	70-130 70-130	ok ok	0.05	<25	ok
m&p-xylene	< 0.5	< 0.5	m&p-xylene o-xyleпe	92.7	70-130	ok	92.1	70-130	ok	0.68	<25	ok
o-xylene styrene	< 0.5	< 0.5	styrene	105	70-130	ok	106	70-130	ok	0.94	<25	ok
bromoform	< 1.0	< 1.0	bromoform	103	70-130	ok	104	70-130	ok	1.05	<25	ok
Isopropylbenzene	< 0.5	< 0.5	isopropylbenzene	111	70-130	ok	111	70-130	ok	0.05	<25	ok
1,2,3-trichloropropane	< 0.5	< 0.5	1,2,3-trichloropropane	95.5	70-130	ok	94.0	70-130	ok	1.58	<25	ok
bromobenzene	< 0.5	< 0.5	bromobenzene	103	70-130	ok	103	70-130	ok	0.36	<25	ok
n-propylbenzene	< 0.5	< 0.5	n-propylbenzene	100	70-130	ok	100	70-130	ok	0.28	<25	ok
2-chlorotoluene	< 0.5	< 0.5	2-chlorotoluene	95.4	70-130	ok	92.3	70-130	ok	3.37	<25	ok
1,3,5-trimethylbenzene	< 0.5	< 0.5	1,3,5-trimethylbenzene	99.4	70-130	ok	99.8	70-130	ok	0.47	<25	ok
trans-1,4-dichioro-2-butene	< 1.0	< 1.0	trans-1,4-dichloro-2-butene	89.1	70-130 70-130	ok	88,8 96,3	70-130 70-130	ok ok	0.37 1.69	<25 <25	ok ok
4-chlorotoluene	< 0.5	< 0.5 < 0.5	4-chlorotoluene	94.7 117	70-130 70-130	ok ok	96.3 117	70-130 70-130	ok ok	0.03	<25 <25	ok ok
tert-butyl-benzene 1,2,4-trimethylbenzene	< 0.5 < 0.5	< 0.5	tert-butyl-benzene 1,2,4-trimethylbenzene	94.0	70-130 70-130	ok	94.8	70-130	ok	0.82	<25	ok
sec-butyl-benzene	< 0.5	< 0.5	sec-butyl-benzene	95.9	70-130	ok	96.2	70-130	ok	0.32	<25	ok
p-isopropyltoluene	< 0.5	< 0.5	p-isopropyltoluene	97.9	70-130	ok	97.5	70-130	ok	0.39	<25	ok
1,3-dichiorobenzene	< 0.6	< 0.5	1,3-dichlorobenzene	95.9	70-130	ok	97.1	70-130	ok	1.28	<25	ok
1,4-dichiorobenzene	< 0.5	< 0.5	1,4-dichlorobenzene	98.7	70-130	ok	100	70-130	ok	1.54	<25	ok
n-butylbenzene	< 0.5	< 0.5	n-butylbenzene	94.8	70-130	ok	95.8	70-130	ok	1.02	<25	ok
1,2-dichlorobenzene	< 0.5	< 0.5	1,2-dichlorobenzene	95.0	70-130	ok	95.4	70-130	ok	0.51	<25	ok
1,2-dibromo-3-chloropropane	< 2.5	< 2.5	1,2-dibromo-3-chloropropane	102	70-130	ok	104	70-130	ok	1.79	<25	ok
1,3,5-trichlorobenzene	< 0.5	< 0.5	1,3,5-trichlorobenzene	106	70-130	ok	107	70-130	ok	1.09	<25	ok
1,2,4-trichlorobenzene	< 0.5	< 0.5	1,2,4-trichlorobenzene	107	70-130	ok	109	70-130	ok	1.54	<25	ok
hexachlorobutadiene	< 0.5	< 0.5	hexachlorobutadiene	105	70-130	ok	107	70-130	ok	1.16	<25	ok
naphthalene	< 1.0	< 1.0	naphthalene	98.3	70-130	ok	99.3	70-130	ok	1.02	<25	ok
1,2,3-trichlorobenzene	< 0.5	< 0.5	1,2,3-trichlorobenzene	102	70-130	ok	104	70-130	ok	1.45	<25	ok
											Acceptane	:0
Surrogates:	Recovery (	%) Acceptance Limit	s Surrogates:	Recovery (%)	Acceptance Limits	Verdict	Recovery (%)	Acceptance Limits	Verdict	RPD	Limits	Verdict
DIBROMOFLUOROMETHANE		70-130	DIBROMOFLUOROMETHANE	101	70-130	ok	103	70-130	ok	1.42	<25	ok
1,2-DICHLOROETHANE-D4	95.0	70-130	1,2-DICHLOROETHANE-D4	105	70-130	ok	105	70-130	ok	0.72	<25	ok
TOLUENE-D8	99.9	70-130	TOLUENE-D8	101	70-130	ok	102	70-130	ok	0.75	<25	ok
4-BROMOFLUOROBENZENE		70-130	4-BROMOFLUOROBENZENE	103	70-130	ok	105	70-130	ok	2.00	<25	ok
1,2-DICHLOROBENZENE-D4	102	70-130	1,2-DICHLOROBENZENE-D4	100	70-130	ok	102	70-130	ok	2.03	<25	ok

106 Hopki (78 FAX	GZA GEOEN	PROJECT MANAGER: MICLE	MA WWW.	1	Some Tuttle (G2A) 1/2/10°	CONTAINER TYPE (P-Plastic,	PRESERVATIVE (CI - HCI, M=Methan	n		SW-2	1-WS	Sample I.D.	CHAIN-OF-CUSTODY RECORD
106 South Street Hopkinton, MA 01748 (781) 278-4700 FAX (508) 435-9912	GZA GEOENVIRONMENTAL, INC.	PROJECT MANAGER: Michele Simpneaux ext. 5802	I'm hour 2/13/69 orth	7 .	PRECEI/BOBY	/-Vial T-Teflon,	PRESERVATIVE (CI - HCI, M=Methanol, N - HNO3, S - H2SO4, Na - NaOH, O - Other)*			2/12/09 1200	2/12/09 1040 5	Matrix A=Air S=Soil Date/Time GW=Grour SW=Surfac WM=Alvasti DW=Dinki P=Product Other (spee	
S 5 7	<sub>Ω</sub>		10 m	1 _	-	her)* P	- Other)* S			£	S& X	A=Air S=Soli SHeGround W. SW=Surface W. WW=Waste W. DW=Drinking W. D P=Product Other (specify)	-
PROJECT BYOOKSI de LOCATION SANTABETT DANS	GZA FILE NO: 01.0043532.10	TURNAROUND TIME	BAH'S as	Hexackrom -	NOTES: (Unless otherwise noted, all samples have been refrigerated to 4°C) "Specify "Other" preservatives and containers types in this space. Metall - Sb, AS, Cd, CT, Cu, Pb, Ni, Se, Ag, En, Fejby のとがるる6015	9	o a			X	X	EPA 8260 - 8021 list	
Southbridge,	1.0043		t s	Bib Comite	herwise noted, a reservatives and	P	1			×	×	EPA 624 WW VOCS  D:601 D:602 WW VOCS	<b>†</b>
	532.10	Standard) Rush	Appendix 6	SM3500CED.	all samples hav containers typ	3	1			×	X	EPA 8270 FULL SVQCs 8230 D G CMS EPA 8270 D PAH D A D BN EPA 625 WW SVOCs	
MA Sam	) TASK NO:	Days, Approved by	e-mai	3	e been refrigera es in this space b, Nì,Se	S P 0				×	X	EPA 6002-PCBs 608 ANALYSIS	
8	h	d by	Α,	1	refrigerated to 4°C) is space.	₹.	()			×		TPH-GO	
		LAB USE: TEMP. OF	and Appendix 6	1	, Feyby n	8	Z			×	X	MCP 14 Metals (MA)  Metals (List Below):  TCLP – Specify Below	_
SHEET_	P.O. NO	TEMP. OF COOLER_		of the	nethoa 6							SPLP - Specify Below  EPA 300	
		3, 9°C		3 8	010, 15-	6	7			X	X	PAH's 3	(for lab use only)
OF		8		, ½	77	70	I			14	× E	Dissolved media for metalls and for metalls and control via To	only)
	2/12/09	p Blank (1970)	CUT TO THE PARTY OF THE PARTY O		16					4	,3,4	Note #	



REPORT DATE 2/20/2009

GZA GEOENVIRONMENTAL, INC. 106 SOUTH STREET HOPKINTON, MA 01748-2207 ATTN: E.HUTCHINSON/M.MIRENDA

CONTRACT NUMBER:

PURCHASE ORDER NUMBER: 8-32286

PROJECT NUMBER:

#### **ANALYTICAL SUMMARY**

LIMS BAT #: LIMT-23271

JOB NUMBER: 01.0043532.10

PROJECT LOCATION: BROOKSIDE TERRACE, SOUTHBRIDGE, MA.

FIELD SAMPLE #	LAB ID	MATRIX	SAMPLE DESCRIPTION	TEST	Subcontract Lab (if any) Cert. Nos.
01	09B04122	WATER OTHE	SW - 1	8270 h2o low	
02	09B04123	WATER OTHE	SW - 2	8270 h2o low	



REPORT DATE 2/20/2009

GZA GEOENVIRONMENTAL, INC. 106 SOUTH STREET HOPKINTON, MA 01748-2207 ATTN: E.HUTCHINSON/M.MIRENDA

CONTRACT NUMBER:

PURCHASE ORDER NUMBER: 8-32286

PROJECT NUMBER:

#### ANALYTICAL SUMMARY

LIMS BAT #: LIMT-23271

JOB NUMBER: 01.0043532.10

Comments:

LIMS BATCH NO.: LIMT-23271

#### CASE NARRATIVE SUMMARY

Recommended sample holding times were not exceeded for all samples unless listed below: None Exceeded

All samples for the method(s) listed were received preserved properly in the proper containers at 4°C +/- 2 degrees as specified on the chain-of-custody form unless listed below: All properly preserved

In method 8270 for all samples, the benzidine tailing factor was outside of method specifications. Reduced sensitivity and resolution is expected for some base/neutral compounds.

In method 8270, initial and/or continuing calibration did not meet method specifications. For all samples, Pentachloronitrobenzene was calibrated with a relative response factor <0.05.

In method 8270, any reported result for Benzoic Acid and 4-Nitrophenol in all samples is estimated and likely to be biased on the low side based on continuing calibration bias.

In method 8270, any reported result for Benzoic Acid in all samples is likely to be biased on the low side based on laboratory fortified blank (laboratory control sample) recovery bias.

In method 8270, laboratory fortified blank duplicate (laboratory control sample) RPD for 2,4-Dinitrotoluene in all samples is outside of control limits. Reduced precision is anticipated for any reported results for this compound in these samples.

In method 8270, for sample 09B04123, surrogate recovery of Phenol-d6 is outside of control limits. Any reported result from the acid fraction is estimated.

There are no other analytical issues which affect the usability of the data.

DETAILED CASE NARRATIVE

#### METHOD SW846 8270 - ADDITIONAL DETAILS

In method 8270, for 2-Chloronaphthalene in all samples, data is not affected by continuing calibration non-conformance since bias is on the high side and all results are "not detected".

Laboratory control sample recoveries for required MCP Data Enhancement 8270 compounds were all within control limits specified by the method, 40-140% for base/neutrals and 30-130% for acids except for "difficult analytes" listed below and/or otherwise listed in this narrative.

Difficult analytes for soil LCS - limits between 10 and 180% depending on the compound (see QC summary report for limits): 3,3'-dichlorobenzidine, pyridine, aniline, 4-chloroaniline, 3-nitroaniline, 2,4-dinitrophenol, and N-nitrosodiphenylamine.

Difficult analytes for water LCS - limits between 10 and 150% depending on the compound (see QC summary report for limits): benzoic acid, dimethylphthalate, bis(2-chloroisopropyl)ether, hexachlorocyclopentadiene, pyridine, 4-nitrophenol, and phenol.



REPORT DATE 2/20/2009

GZA GEOENVIRONMENTAL, INC. 106 SOUTH STREET HOPKINTON, MA 01748-2207 ATTN: E.HUTCHINSON/M.MIRENDA

CONTRACT NUMBER:

PURCHASE ORDER NUMBER: 8-32286

PROJECT NUMBER:

#### **ANALYTICAL SUMMARY**

LIMS BAT #: LIMT-23271

JOB NUMBER: 01.0043532.10

Duplicate laboratory fortified blank RPDs were all less than or equal to 20% for water or 30% for soil except for "difficult analytes" where RPDs of 50% are used and/or otherwise listed below or elsewhere in this narrative.

Difficult analytes for water RPDs: aniline, benzoic acid, benzo(a,h)anthracene, dimethylphthalte, hexachlorocyclopentadiene, hexachloroethane, indeno(1,2,3-cd)pyrene, 4,6-dinitro-2-methylphenol, 2,4-dinitrophenol, 4-nitrophenol, 2,4,6-trichlorophenol, pentachlorophenol, and pyridine.

Difficult analytes for soil RPDs: 3,3'-dichlorobenzidine, benzoic acid, 4-nitrophenol, aniline, and pyridine.

In method 8270, for sample 09B04122, surrogate recovery of Phenol-d6 is outside of control limits but within method requirements.

The results of analyses performed are based on samples as submitted to the laboratory and relate only to the items collected and tested.

The CON-TEST Environmental Laboratory operates under the following certifications and accreditations. AIHA accreditations only apply to NiOSH methods and Environmental Lead Analyses.

AIHA 100033 MASSACHUSETTS MA0100

CONNECTICUT PH-0567 NEW YORK ELAP/NELAP 10899 AIHA ELLAP (LEAD) 100033

NEW HAMPSHIRE NELAP 2516 VERMONT DOH (LEAD) No. LL015036 RHODE ISLAND (LIC. No. 112) NORTH CAROLINA CERT. # 652 NEW JERSEY NELAP NJ MA007 (AIR)

FLORIDA DOH E871027 (AIR)

I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

//// WW 10

Tod Kopyscinski
Air Laboratory Manager

Michael Erickson

Assistant Laboratory Director

SIGNATURE DATE

Edward Denson Technical Director Daren Damboragian

Organics Department Supervisor

<sup>\*</sup> See end of data tabulation for notes and comments pertaining to this sample



E.HUTCHINSON/M.MIRENDA

GZA GEOENVIRONMENTAL, INC. 2/20/2009
106 SOUTH STREET Page 1 of 7

HOPKINTON, MA 01748-2207 Purchase Order No.: 8-32286

Project Location: BROOKSIDE TERRACE, SOUTHBRIDGE, MA. LIMS-BAT #: LIMT-23271

Date Received: 2/13/2009 Job Number: 01.0043532.10

Field Sample #: 01

**Sample ID: 09B04122** ‡Sampled: 2/12/2009

SW - 1

Sample Matrix: WATER OTHER

	Units	Results	Date Analyzed	Analyst	RL	SPEC Lo	Limit Hi	P/ F
Acenaphthene	ug/l	ND	02/19/09	BGL	0.30			
Acenaphthylene	ug/l	ND	02/19/09	BGL	0.30			
Acetophenone	ug/l	ND	02/19/09	BGL	10.0			
Aniline	ug/l	ND	02/19/09	BGL	5.00			
Anthracene	ug/l	ND	02/19/09	BGL	0.20			
Benzoic Acid	ug/l	ND	02/19/09	BGL	30.0			
Benzo(a)anthracene	ug/l	0.270	02/19/09	BGL	0.050			
Benzo(a)pyrene	ug/l	0.160	02/19/09	BGL	0.100			
Benzo(b)fluoranthene	ug/l	0.340	02/19/09	BGL	0.050			
Benzo(g,h,i)perylene	ug/l	ND	02/19/09	BGL	0.500			
Benzo(k)fluoranthene	ug/l	ND	02/19/09	BGL	0.200			
Bis(2-chloroethoxy)methane	ug/l	ND	02/19/09	BGL	10.0			
Bis(2-chloroethyl)ether	ug/l	ND	02/19/09	BGL	10.0			
Bis(2-chloroisopropyl)ether	ug/l	ND	02/19/09	BGL	10.0			
Bis(2-ethylhexyl)phthalate	ug/l	ND	02/19/09	BGL	1.00			
4-Bromophenyl phenyl ether	ug/l	ND	02/19/09	BGL	10.0			
Butylbenzylphthalate	ug/l	ND	02/19/09	BGL	20.0			
Carbazole	ug/l	ND	02/19/09	BGL	5.00			
4-Chloroaniline	ug/l	ND	02/19/09	BGL	20.0			
4-Chloro-3-methylphenol	ug/l	ND	02/19/09	BGL	20.0			
2-Chloronaphthalene	ug/l	ND	02/19/09	BGL	10.0			
2-Chlorophenol	ug/l	ND	02/19/09	BGL	10.0			
4-Chlorophenylphenyl ether	ug/l	ND	02/19/09	BGL	10.0			
Chrysene	ug/l	0.22	02/19/09	BGL	0.20			
Dibenzofuran	ug/l	ND	02/19/09	BGL	10.0			
Dibenz(a,h)anthracene	ug/l	ND	02/19/09	BGL	0.200			
1,2-Dichlorobenzene	ug/l	ND	02/19/09	BGL	5.00			
1,3-Dichlorobenzene	ug/l	ND	02/19/09	BGL	5.00			
1,4-Dichlorobenzene	ug/l	ND	02/19/09	BGL	5.00			

RL = Reporting Limit

ND = Not Detected at or above the Reporting Limit

SPEC LIMIT = a client specified recommended or regulatory level for comparison with data to determine PASS (P) or FAIL (F) condition of results.

<sup>\* =</sup> See end of report for comments and notes applying to this sample

**<sup>‡</sup>** = See attached chain-of-custody record for time sampled



E.HUTCHINSON/M.MIRENDA

GZA GEOENVIRONMENTAL, INC. 2/20/2009
106 SOUTH STREET Page 2 of 7

HOPKINTON, MA 01748-2207 Purchase Order No.: 8-32286

Project Location: BROOKSIDE TERRACE, SOUTHBRIDGE, MA. LIMS-BAT #: LIMT-23271

Date Received: 2/13/2009 Job Number: 01.0043532.10

Date Received: 2/13/2009 Field Sample #: 01

**Sample ID: 09B04122** ‡Sampled: 2/12/2009

SW - 1

Sample Matrix: WATER OTHER

	Units	Results	Date Analyzed	Analyst	RL	SPEC Lo	Limit Hi	P/ F
3,3-Dichlorobenzidine	ug/l	ND	02/19/09	BGL	10.0	LO	111	
2,4-Dichlorophenol	ug/l	ND	02/19/09	BGL	10.0			
Diethylphthalate	ug/l	ND	02/19/09	BGL	10.0			
2,4-Dimethylphenol	ug/l	ND	02/19/09	BGL	40.0			
Dimethylphthalate	ug/l	ND	02/19/09	BGL	20.0			
Di-n-butylphthalate	ug/l	ND	02/19/09	BGL	10.0			
Di-n-octylphthalate	ug/l	ND	02/19/09	BGL	20.0			
4,6-Dinitro-2-methylphenol	ug/l	ND	02/19/09	BGL	10.0			
2,4-Dinitrophenol	ug/l	ND	02/19/09	BGL	20.0			
2,4-Dinitrotoluene	ug/l	ND	02/19/09	BGL	10.0			
2,6-Dinitrotoluene	ug/l	ND	02/19/09	BGL	10.0			
1,2-Diphenylhydrazine (as	ug/l	ND	02/19/09	BGL	10.0			
Azobenzene)	ug/i	ND	02/10/00	DOL	10.0			
Fluoranthene	ug/l	0.72	02/19/09	BGL	0.50			
Fluorene	ug/l	ND	02/19/09	BGL	1.00			
Hexachlorobenzene	ug/l	ND	02/19/09	BGL	0.05			
Hexachlorobutadiene	ug/l	ND	02/19/09	BGL	0.20			
Hexachlorocyclopentadiene	ug/l	ND	02/19/09	BGL	20.0			
Hexachloroethane	ug/l	ND	02/19/09	BGL	1.00			
Indeno(1,2,3-cd)pyrene	ug/l	ND	02/19/09	BGL	0.200			
Isophorone	ug/l	ND	02/19/09	BGL	10.0			
o-cresol	ug/l	ND	02/19/09	BGL	10.0			
m & p-Cresol(s)	ug/l	ND	02/19/09	BGL	20.0			
2-Methylnaphthalene	ug/l	ND	02/19/09	BGL	1.00			
Naphthalene	ug/l	ND	02/19/09	BGL	1.00			
2-Nitroaniline	ug/l	ND	02/19/09	BGL	10.0			
3-Nitroaniline	ug/l	ND	02/19/09	BGL	10.0			
4-Nitroaniline	ug/l	ND	02/19/09	BGL	10.0			
Nitrobenzene	ug/l	ND	02/19/09	BGL	10.0			

RL = Reporting Limit

ND = Not Detected at or above the Reporting Limit

SPEC LIMIT = a client specified recommended or regulatory level for comparison with data to determine PASS (P) or FAIL (F) condition of results.

<sup>\* =</sup> See end of report for comments and notes applying to this sample

**<sup>‡</sup>** = See attached chain-of-custody record for time sampled



E.HUTCHINSON/M.MIRENDA

GZA GEOENVIRONMENTAL, INC. 2/20/2009
106 SOUTH STREET Page 3 of 7

HOPKINTON, MA 01748-2207 Purchase Order No.: 8-32286

Project Location: BROOKSIDE TERRACE, SOUTHBRIDGE, MA. LIMS-BAT #: LIMT-23271

Date Received: 2/13/2009 Job Number: 01.0043532.10

Date Received: 2/13/2009
Field Sample #: 01

**Sample ID: 09B04122** ‡Sampled: 2/12/2009

SW - 1

Sample Matrix: WATER OTHER

	Units	Results	Date Analyzed	Analyst	RL	SPEC Lo	Limit Hi	P/ F
2-Nitrophenol	ug/l	ND	02/19/09	BGL	10.0			
4-Nitrophenol	ug/l	ND	02/19/09	BGL	20.0			
N-Nitrosodiphenylamine	ug/l	ND	02/19/09	BGL	10.0			
N-Nitroso-di-n-propylamine	ug/l	ND	02/19/09	BGL	10.0			
Pentachloronitribenzene	ug/l	ND	02/19/09	BGL	10.0			
Pentachlorophenol	ug/l	ND	02/19/09	BGL	10.0			
Phenanthrene	ug/l	0.82	02/19/09	BGL	0.05			
Phenol	ug/l	ND	02/19/09	BGL	10.0			
Pyrene	ug/l	ND	02/19/09	BGL	1.00			
Pyridine	ug/l	ND	02/19/09	BGL	5.0			
1,2,4,5-Tetrachlorobenzene	ug/l	ND	02/19/09	BGL	10.0			
1,2,4-Trichlorobenzene	ug/l	ND	02/19/09	BGL	5.00			
2,4,5-Trichlorophenol	ug/l	ND	02/19/09	BGL	10.0			
2,4,6-Trichlorophenol	ug/l	ND	02/19/09	BGL	10.0			
Extraction Date 625/8270		2/18/2009	02/19/09	BGL				

#### Analytical Method:

SW846 8270

SAMPLES ARE EXTRACTED INTO METHYLENE CHLORIDE BY LIQUID/LIQUID EXTRACTION METHOD 3510 C, FOLLOWED BY KUDERNA-DANISH OR TURBOVAP EVAPORATIVE CONCENTRATION AND QUANTITATED BY GC/MS TARGET COMPOUND ANALYSIS.

RL = Reporting Limit

ND = Not Detected at or above the Reporting Limit

SPEC LIMIT = a client specified recommended or regulatory level for comparison with data to determine PASS (P) or FAIL (F) condition of results.

<sup>\* =</sup> See end of report for comments and notes applying to this sample

**<sup>‡</sup>** = See attached chain-of-custody record for time sampled



E.HUTCHINSON/M.MIRENDA

GZA GEOENVIRONMENTAL, INC. 2/20/2009
106 SOUTH STREET Page 4 of 7

HOPKINTON, MA 01748-2207 Purchase Order No.: 8-32286

Project Location: BROOKSIDE TERRACE, SOUTHBRIDGE, MA. LIMS-BAT #: LIMT-23271

Date Received: 2/13/2009 Job Number: 01.0043532.10

Field Sample #: 02

**Sample ID: 09B04123** ‡Sampled: 2/12/2009

SW - 2

Sample Matrix: WATER OTHER

	Units	Results	Date Analyzed	Analyst	RL	SPEC Lo	Limit Hi	P/ F
Acenaphthene	ug/l	ND	02/19/09	BGL	0.30	LU	111	
Acenaphthylene	ug/l	ND	02/19/09	BGL	0.30			
Acetophenone	ug/l	ND	02/19/09	BGL	10.0			
Aniline	ug/l	ND	02/19/09	BGL	5.00			
Anthracene	ug/l	0.26	02/19/09	BGL	0.20			
Benzoic Acid	_	ND	02/19/09	BGL	30.0			
	ug/l	0.380	02/19/09		0.050			
Benzo(a)anthracene	ug/l			BGL				
Benzo(a)pyrene	ug/l	0.290	02/19/09	BGL	0.100			
Benzo(b)fluoranthene	ug/l	0.530	02/19/09	BGL	0.050			
Benzo(g,h,i)perylene	ug/l	ND	02/19/09	BGL	0.500			
Benzo(k)fluoranthene	ug/l	0.270	02/19/09	BGL	0.200			
Bis(2-chloroethoxy)methane	ug/l	ND	02/19/09	BGL	10.0			
Bis(2-chloroethyl)ether	ug/l	ND	02/19/09	BGL	10.0			
Bis(2-chloroisopropyl)ether	ug/l	ND	02/19/09	BGL	10.0			
Bis(2-ethylhexyl)phthalate	ug/l	ND	02/19/09	BGL	1.00			
4-Bromophenyl phenyl ether	ug/l	ND	02/19/09	BGL	10.0			
Butylbenzylphthalate	ug/l	ND	02/19/09	BGL	20.0			
Carbazole	ug/l	ND	02/19/09	BGL	5.00			
4-Chloroaniline	ug/l	ND	02/19/09	BGL	20.0			
4-Chloro-3-methylphenol	ug/l	ND	02/19/09	BGL	20.0			
2-Chloronaphthalene	ug/l	ND	02/19/09	BGL	10.0			
2-Chlorophenol	ug/l	ND	02/19/09	BGL	10.0			
4-Chlorophenylphenyl ether	ug/l	ND	02/19/09	BGL	10.0			
Chrysene	ug/l	0.38	02/19/09	BGL	0.20			
Dibenzofuran	ug/l	ND	02/19/09	BGL	10.0			
Dibenz(a,h)anthracene	ug/l	ND	02/19/09	BGL	0.200			
1,2-Dichlorobenzene	ug/l	ND	02/19/09	BGL	5.00			
1,3-Dichlorobenzene	ug/l	ND	02/19/09	BGL	5.00			
1,4-Dichlorobenzene	ug/l	ND	02/19/09	BGL	5.00			

RL = Reporting Limit

ND = Not Detected at or above the Reporting Limit

SPEC LIMIT = a client specified recommended or regulatory level for comparison with data to determine PASS (P) or FAIL (F) condition of results.

NM = Not Measured

<sup>\* =</sup> See end of report for comments and notes applying to this sample

**<sup>‡ =</sup>** See attached chain-of-custody record for time sampled



E.HUTCHINSON/M.MIRENDA

GZA GEOENVIRONMENTAL, INC. 2/20/2009
106 SOUTH STREET Page 5 of 7

HOPKINTON, MA 01748-2207 Purchase Order No.: 8-32286

Project Location: BROOKSIDE TERRACE, SOUTHBRIDGE, MA. LIMS-BAT #: LIMT-23271

Date Received: 2/13/2009 Job Number: 01.0043532.10

Field Sample #: 02

**Sample ID: 09B04123** ‡Sampled: 2/12/2009

SW - 2

Sample Matrix: WATER OTHER

	Units	Results	Date Analyzed	Analyst	RL	SPEC Lo	Limit Hi	P/ F
3,3-Dichlorobenzidine	ug/l	ND	02/19/09	BGL	10.0			
2,4-Dichlorophenol	ug/l	ND	02/19/09	BGL	10.0			
Diethylphthalate	ug/l	ND	02/19/09	BGL	10.0			
2,4-Dimethylphenol	ug/l	ND	02/19/09	BGL	40.0			
Dimethylphthalate	ug/l	ND	02/19/09	BGL	20.0			
Di-n-butylphthalate	ug/l	ND	02/19/09	BGL	10.0			
Di-n-octylphthalate	ug/l	ND	02/19/09	BGL	20.0			
4,6-Dinitro-2-methylphenol	ug/l	ND	02/19/09	BGL	10.0			
2,4-Dinitrophenol	ug/l	ND	02/19/09	BGL	20.0			
2,4-Dinitrotoluene	ug/l	ND	02/19/09	BGL	10.0			
2,6-Dinitrotoluene	ug/l	ND	02/19/09	BGL	10.0			
1,2-Diphenylhydrazine (as Azobenzene)	ug/l	ND	02/19/09	BGL	10.0			
Fluoranthene	ug/l	1.46	02/19/09	BGL	0.50			
Fluorene	ug/l	ND	02/19/09	BGL	1.00			
Hexachlorobenzene	ug/l	ND	02/19/09	BGL	0.05			
Hexachlorobutadiene	ug/l	ND	02/19/09	BGL	0.20			
Hexachlorocyclopentadiene	ug/l	ND	02/19/09	BGL	20.0			
Hexachloroethane	ug/l	ND	02/19/09	BGL	1.00			
Indeno(1,2,3-cd)pyrene	ug/l	0.280	02/19/09	BGL	0.200			
Isophorone	ug/l	ND	02/19/09	BGL	10.0			
o-cresol	ug/l	ND	02/19/09	BGL	10.0			
m & p-Cresol(s)	ug/l	ND	02/19/09	BGL	20.0			
2-Methylnaphthalene	ug/l	ND	02/19/09	BGL	1.00			
Naphthalene	ug/l	ND	02/19/09	BGL	1.00			
2-Nitroaniline	ug/l	ND	02/19/09	BGL	10.0			
3-Nitroaniline	ug/l	ND	02/19/09	BGL	10.0			
4-Nitroaniline	ug/l	ND	02/19/09	BGL	10.0			
Nitrobenzene	ug/l	ND	02/19/09	BGL	10.0			

RL = Reporting Limit

ND = Not Detected at or above the Reporting Limit

SPEC LIMIT = a client specified recommended or regulatory level for comparison with data to determine PASS (P) or FAIL (F) condition of results.

<sup>\* =</sup> See end of report for comments and notes applying to this sample

**<sup>‡</sup>** = See attached chain-of-custody record for time sampled



E.HUTCHINSON/M.MIRENDA

GZA GEOENVIRONMENTAL, INC. 2/20/2009
106 SOUTH STREET Page 6 of 7

HOPKINTON, MA 01748-2207 Purchase Order No.: 8-32286

Project Location: BROOKSIDE TERRACE, SOUTHBRIDGE, MA. LIMS-BAT #: LIMT-23271

Date Received: 2/13/2009 Job Number: 01.0043532.10

Field Sample #: 02

**Sample ID: 09B04123** ‡Sampled: 2/12/2009

SW - 2

Sample Matrix: WATER OTHER

	Units	Results	Date	Analyst	RL	SPEC	Limit	P/F
			Analyzed			Lo	Hi	
2-Nitrophenol	ug/l	ND	02/19/09	BGL	10.0			
4-Nitrophenol	ug/l	ND	02/19/09	BGL	20.0			
N-Nitrosodiphenylamine	ug/l	ND	02/19/09	BGL	10.0			
N-Nitroso-di-n-propylamine	ug/l	ND	02/19/09	BGL	10.0			
Pentachloronitribenzene	ug/l	ND	02/19/09	BGL	10.0			
Pentachlorophenol	ug/l	ND	02/19/09	BGL	10.0			
Phenanthrene	ug/l	1.35	02/19/09	BGL	0.05			
Phenol	ug/l	ND	02/19/09	BGL	10.0			
Pyrene	ug/l	ND	02/19/09	BGL	1.00			
Pyridine	ug/l	ND	02/19/09	BGL	5.0			
1,2,4,5-Tetrachlorobenzene	ug/l	ND	02/19/09	BGL	10.0			
1,2,4-Trichlorobenzene	ug/l	ND	02/19/09	BGL	5.00			
2,4,5-Trichlorophenol	ug/l	ND	02/19/09	BGL	10.0			
2,4,6-Trichlorophenol	ug/l	ND	02/19/09	BGL	10.0			
Extraction Date 625/8270		2/18/2009	02/19/09	BGL				

#### Analytical Method:

SW846 8270

SAMPLES ARE EXTRACTED INTO METHYLENE CHLORIDE BY LIQUID/LIQUID EXTRACTION METHOD 3510 C, FOLLOWED BY KUDERNA-DANISH OR TURBOVAP EVAPORATIVE CONCENTRATION AND QUANTITATED BY GC/MS TARGET COMPOUND ANALYSIS.

RL = Reporting Limit

ND = Not Detected at or above the Reporting Limit

SPEC LIMIT = a client specified recommended or regulatory level for comparison with data to determine PASS (P) or FAIL (F) condition of results.

<sup>\* =</sup> See end of report for comments and notes applying to this sample

<sup>‡ =</sup> See attached chain-of-custody record for time sampled



E.HUTCHINSON/M.MIRENDA GZA GEOENVIRONMENTAL, INC.

2/20/2009 106 SOUTH STREET Page 7 of 7

HOPKINTON, MA 01748-2207 Purchase Order No.: 8-32286

Project Location: BROOKSIDE TERRACE, SOUTHBRIDGE, MA. LIMS-BAT #: LIMT-23271 Date Received: 2/13/2009 Job Number: 01.0043532.10

\*\* END OF REPORT \*\*

RL = Reporting Limit

ND = Not Detected at or above the Reporting Limit

NM = Not Measured

SPEC LIMIT = a client specified recommended or regulatory level for comparison with data to determine PASS (P) or FAIL (F) condition of results.

<sup>\* =</sup> See end of report for comments and notes applying to this sample



# QC SUMMARY REPORT

SAMPLE QC: Sample Results with Duplicates

BATCH QC: Lab fortified Blanks and Duplicates

Sample Matrix Spikes and Matrix Spike Duplicates

Standard Reference Materials and Duplicates

Report Date:	2/20/2009	Lims Bat #: LIMT-23271	Page 1 of 19		1 of 19
QC Batch Number:	GCMS/SEMI-11942				
Sample Id	Analysis	QC Analysis	Values	Units	Limits
09B04122					
	Phenol-d6	Surrogate Recovery	12.5	%	15-110
	Nitrobenzene-d5	Surrogate Recovery	75.0	%	30-130
	2-Fluorobiphenyl	Surrogate Recovery	73.2	%	30-130
	2,4,6-Tribromophenol	Surrogate Recovery	79.7	%	15-110
	Terphenyl-d14	Surrogate Recovery	75.4	%	30-130
	2-Fluorophenol	Surrogate Recovery	24.2	%	15-110
9B04123					
	Phenol-d6	Surrogate Recovery	9.0	%	15-110
	Nitrobenzene-d5	Surrogate Recovery	66.3	%	30-130
	2-Fluorobiphenyl	Surrogate Recovery	67.3	%	30-130
	2,4,6-Tribromophenol	Surrogate Recovery	71.5	%	15-110
	Terphenyl-d14	Surrogate Recovery	67.0	%	30-130
	2-Fluorophenol	Surrogate Recovery	17.5	%	15-110
BLANK-129745					
	1,4-Dichlorobenzene	Blank	<5.00	ug/l	
	Naphthalene	Blank	<1.00	ug/l	
	1,2-Dichlorobenzene	Blank	<5.00	ug/l	
	1,3-Dichlorobenzene	Blank	<5.00	ug/l	
	Acenaphthene	Blank	<0.30	ug/l	
	Acenaphthylene	Blank	<0.30	ug/l	
	Aniline	Blank	<5.00	ug/l	
	Anthracene	Blank	<0.20	ug/l	
	Benzo(a)anthracene	Blank	<0.050	ug/l	
	Benzo(a)pyrene	Blank	<0.100	ug/l	
	Benzo(b)fluoranthene	Blank	<0.050	ug/l	
	Benzo(g,h,i)perylene	Blank	<0.500	ug/l	
	Benzoic Acid	Blank	<30.0	ug/l	
	Bis(2-chloroethyl)ether	Blank	<10.0	ug/l	
	Bis(2-chloroethoxy)methane	Blank	<10.0	ug/l	
	Bis(2-chloroisopropyl)ether	Blank	<10.0	ug/l	
	Bis(2-ethylhexyl)phthalate	Blank	<1.00	ug/l	
	4-Bromophenyl phenyl ether	Blank	<10.0	ug/l	
	Butylbenzylphthalate	Blank	<20.0	ug/l	
	4-Chloroaniline	Blank	<20.0	ug/l	
	2-Chloronaphthalene	Blank	<10.0	ug/l	
	4-Chlorophenylphenyl ether	Blank	<10.0	ug/l	
	Chrysene	Blank	<0.20	ug/l	
	Dibenz(a,h)anthracene	Blank	<0.200	ug/l	
	Dibenzofuran	Blank	<10.0	ug/l	
	3,3-Dichlorobenzidine	Blank	<10.0	ug/l	
	Diethylphthalate	Blank	<10.0	ug/l	
	Dimethylphthalate	Blank	<20.0	ug/l	
	Di-n-butylphthalate	Blank	<10.0	ug/l	



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QC Batch Number:	GCMS/SEMI-11942				
Sample Id	Analysis	QC Analysis	Values	Units	Limits
BLANK-129745					
	2,4-Dinitrotoluene	Blank	<10.0	ug/l	
	2,6-Dinitrotoluene	Blank	<10.0	ug/l	
	1,2-Diphenylhydrazine (as Azobenzene)	Blank	<10.0	ug/l	
	Di-n-octylphthalate	Blank	<20.0	ug/l	
	Fluoranthene	Blank	<0.50	ug/l	
	Fluorene	Blank	<1.00	ug/l	
	Hexachlorobenzene	Blank	<0.05	ug/l	
	Hexachlorobutadiene	Blank	<0.20	ug/l	
	Hexachlorocyclopentadiene	Blank	<20.0	ug/l	
	Hexachloroethane	Blank	<1.00	ug/l	
	Indeno(1,2,3-cd)pyrene	Blank	<0.200	ug/l	
	Isophorone	Blank	<10.0	ug/l	
	2-Methylnaphthalene	Blank	<1.00	ug/l	
	2-Nitroaniline	Blank	<10.0	ug/l	
	3-Nitroaniline	Blank	<10.0	ug/l	
	Nitrobenzene	Blank	<10.0	ug/l	
	N-Nitroso-di-n-propylamine	Blank	<10.0	ug/l	
	N-Nitrosodiphenylamine	Blank	<10.0	ug/l	
	Phenanthrene	Blank	<0.05	ug/l	
	Pyrene	Blank	<1.00	ug/l	
	1,2,4-Trichlorobenzene	Blank	<5.00	ug/l	
	4-Chloro-3-methylphenol	Blank	<20.0	ug/l	
	2-Chlorophenol	Blank	<10.0	ug/l	
	2,4-Dichlorophenol	Blank	<10.0	ug/l	
	2,4-Dimethylphenol	Blank	<40.0	ug/l	
	4,6-Dinitro-2-methylphenol	Blank	<10.0	ug/l	
	2,4-Dinitrophenol	Blank	<20.0	ug/l	
	o-cresol	Blank	<10.0	ug/l	
	m & p-Cresol(s)	Blank	<20.0	ug/l	
	2-Nitrophenol	Blank	<10.0	ug/l	
	4-Nitrophenol	Blank	<20.0	ug/l	
	Phenol	Blank	<10.0	ug/l	
	2,4,5-Trichlorophenol	Blank	<10.0	ug/l	
	2,4,6-Trichlorophenol	Blank	<10.0	ug/l	
	Pentachlorophenol	Blank	<10.0	ug/l	
	Pyridine	Blank	<5.0	ug/l	
	Benzo(k)fluoranthene	Blank	<0.200	ug/l	
	4-Nitroaniline	Blank	<10.0	ug/l	
	Acetophenone	Blank	<10.0	ug/l	
	Carbazole	Blank	<5.00	ug/l	
	Pentachloronitribenzene	Blank	<10.0	ug/l	
	1,2,4,5-Tetrachlorobenzene	Blank	<10.0	ug/l	



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QC Batch Number	r: GCMS/SEMI-11942						
Sample Id	Analysis	QC Analysis	Values	Units	Limits		
FBLANK-91848							
	1,4-Dichlorobenzene	Lab Fort Blank Amt.	100.00	ug/l			
		Lab Fort Blk. Found	61.80	ug/l			
		Lab Fort Blk. % Rec.	61.80	%	40-140		
		Dup Lab Fort BI Amt.	100.00	ug/l			
		Dup Lab Fort Bl. Fnd	59.55	ug/l			
		Dup Lab Fort BI %Rec	59.55	%			
		Lab Fort Blank Range	2.25	units			
		Lab Fort Bl. Av. Rec	60.67	%			
		LFB Duplicate RPD	3.70	%	0-20		
	Naphthalene	Lab Fort Blank Amt.	100.00	ug/l			
		Lab Fort Blk. Found	63.28	ug/l			
		Lab Fort Blk. % Rec.	63.28	%	40-140		
		Dup Lab Fort Bl Amt.	100.00	ug/l			
		Dup Lab Fort Bl. Fnd	60.88	ug/l			
		Dup Lab Fort Bl %Rec	60.88	%			
		Lab Fort Blank Range	2.39	units			
		Lab Fort Bl. Av. Rec	62.08	%			
		LFB Duplicate RPD	3.86	%	0-20		
	1,2-Dichlorobenzene	Lab Fort Blank Amt.	100.00	ug/l			
		Lab Fort Blk. Found	61.28	ug/l			
		Lab Fort Blk. % Rec.	61.28	%	40-140		
		Dup Lab Fort Bl Amt.	100.00	ug/l			
		Dup Lab Fort Bl. Fnd	59.67	ug/l			
		Dup Lab Fort BI %Rec	59.67	%			
		Lab Fort Blank Range	1.60	units			
		Lab Fort Bl. Av. Rec	60.47	%			
		LFB Duplicate RPD	2.66	%	0-20		
	1,3-Dichlorobenzene	Lab Fort Blank Amt.	100.00	ug/l			
		Lab Fort Blk. Found	61.41	ug/l			
		Lab Fort Blk. % Rec.	61.41	%	40-140		
		Dup Lab Fort Bl Amt.	100.00	ug/l			
		Dup Lab Fort Bl. Fnd	58.70	ug/l			
		Dup Lab Fort BI %Rec	58.70	%			
		Lab Fort Blank Range	2.71	units			
		Lab Fort Bl. Av. Rec	60.05	%			
		LFB Duplicate RPD	4.51	%	0-20		
	Acenaphthene	Lab Fort Blank Amt.	100.00	ug/l			
	•	Lab Fort Blk. Found	64.92	ug/l			
		Lab Fort Blk. % Rec.	64.92	%	40-140		
		Dup Lab Fort Bl Amt.	100.00	ug/l			
		Dup Lab Fort Bl. Fnd	61.76	ug/l			
		Dup Lab Fort BI %Rec	61.76	%			
		Lab Fort Blank Range	3.16	units			



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Sample Id	Analysis	QC Analysis	Values	Units	Limits	
BLANK-91848						
	Acenaphthene	Lab Fort Bl. Av. Rec	63.34	%		
		LFB Duplicate RPD	4.98	%	0-20	
	Acenaphthylene	Lab Fort Blank Amt.	100.00	ug/l		
		Lab Fort Blk. Found	64.56	ug/l		
		Lab Fort Blk. % Rec.	64.56	%	40-140	
		Dup Lab Fort Bl Amt.	100.00	ug/l		
		Dup Lab Fort Bl. Fnd	61.39	ug/l		
		Dup Lab Fort BI %Rec	61.39	%		
		Lab Fort Blank Range	3.17	units		
		Lab Fort Bl. Av. Rec	62.97	%		
		LFB Duplicate RPD	5.03	%	0-20	
	Aniline	Lab Fort Blank Amt.	100.00	ug/l		
		Lab Fort Blk. Found	50.74	ug/l		
		Lab Fort Blk. % Rec.	50.74	%	40-140	
		Dup Lab Fort Bl Amt.	100.00	ug/l		
		Dup Lab Fort Bl. Fnd	50.35	ug/l		
		Dup Lab Fort BI %Rec	50.35	%		
		Lab Fort Blank Range	0.38	units		
		Lab Fort Bl. Av. Rec	50.54	%		
		LFB Duplicate RPD	0.77	%	0-50	
	Anthracene	Lab Fort Blank Amt.	100.00	ug/l		
		Lab Fort Blk. Found	64.42	ug/l		
		Lab Fort Blk. % Rec.	64.42	%	40-140	
		Dup Lab Fort Bl Amt.	100.00	ug/l		
		Dup Lab Fort Bl. Fnd	59.80	ug/l		
		Dup Lab Fort BI %Rec	59.80	%		
		Lab Fort Blank Range	4.62	units		
		Lab Fort Bl. Av. Rec	62.11	%		
		LFB Duplicate RPD	7.43	%	0-20	
	Benzo(a)anthracene	Lab Fort Blank Amt.	100.000	ug/l		
	. ,	Lab Fort Blk. Found	70.140	ug/l		
		Lab Fort Blk. % Rec.	70.140	%	40-140	
		Dup Lab Fort BI Amt.	100.000	ug/l		
		Dup Lab Fort Bl. Fnd	67.120	ug/l		
		Dup Lab Fort BI %Rec	67.120	%		
		Lab Fort Blank Range	3.020	units		
		Lab Fort Bl. Av. Rec	68.630	%		
		LFB Duplicate RPD	4.400	%	0-50	
	Benzo(a)pyrene	Lab Fort Blank Amt.	100.000	ug/l	- 00	
	(/-). 55	Lab Fort Blk. Found	75.790	ug/l		
		Lab Fort Blk. % Rec.	75.790	%	40-140	
		Dup Lab Fort Bl Amt.	100.000	ug/l	.5	
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Sample Id	Analysis	QC Analysis	Values	Units	Limits
FBLANK-91848					
	Benzo(a)pyrene	Dup Lab Fort BI %Rec	70.930	%	
		Lab Fort Blank Range	4.860	units	
		Lab Fort Bl. Av. Rec	73.360	%	
		LFB Duplicate RPD	6.624	%	0-20
	Benzo(b)fluoranthene	Lab Fort Blank Amt.	100.000	ug/l	
		Lab Fort Blk. Found	76.430	ug/l	
		Lab Fort Blk. % Rec.	76.430	%	40-140
		Dup Lab Fort BI Amt.	100.000	ug/l	
		Dup Lab Fort Bl. Fnd	76.200	ug/l	
		Dup Lab Fort BI %Rec	76.200	%	
		Lab Fort Blank Range	0.229	units	
		Lab Fort Bl. Av. Rec	76.315	%	
		LFB Duplicate RPD	0.301	%	0-20
	Benzo(g,h,i)perylene	Lab Fort Blank Amt.	100.000	ug/l	
		Lab Fort Blk. Found	62.290	ug/l	
		Lab Fort Blk. % Rec.	62.290	%	40-140
		Dup Lab Fort BI Amt.	100.000	ug/l	
		Dup Lab Fort Bl. Fnd	57.390	ug/l	
		Dup Lab Fort BI %Rec	57.390	%	
		Lab Fort Blank Range	4.900	units	
		Lab Fort Bl. Av. Rec	59.840	%	
		LFB Duplicate RPD	8.188	%	0-20
	Benzoic Acid	Lab Fort Blank Amt.	100.00	ug/l	
		Lab Fort Blk. Found	0.10	ug/l	
		Lab Fort Blk. % Rec.	0.10	%	10-130
		Dup Lab Fort Bl Amt.	100.00	ug/l	
		Dup Lab Fort Bl. Fnd	0.10	ug/l	
		Dup Lab Fort BI %Rec	0.10	%	
		Lab Fort Blank Range	0.00	units	
		Lab Fort Bl. Av. Rec	0.10	%	
		LFB Duplicate RPD	0.00	%	0-50
	Bis(2-chloroethyl)ether	Lab Fort Blank Amt.	100.00	ug/l	
		Lab Fort Blk. Found	82.56	ug/l	
		Lab Fort Blk. % Rec.	82.56	%	40-140
		Dup Lab Fort Bl Amt.	100.00	ug/l	
		Dup Lab Fort Bl. Fnd	81.59	ug/l	
		Dup Lab Fort Bl %Rec	81.59	%	
		Lab Fort Blank Range	0.96	units	
		Lab Fort Bl. Av. Rec	82.08	%	
		LFB Duplicate RPD	1.16	%	0-20
	Bis(2-chloroethoxy)methane	Lab Fort Blank Amt.	100.00	ug/l	
	• • • • • • • • • • • • • • • • • • • •	Lab Fort Blk. Found	75.47	ug/l	
		Lab Fort Blk. % Rec.	75.47	%	40-140



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_FBLANK-91848					
	Bis(2-chloroethoxy)methane	Dup Lab Fort Bl Amt.	100.00	ug/l	
		Dup Lab Fort Bl. Fnd	73.55	ug/l	
		Dup Lab Fort BI %Rec	73.55	%	
		Lab Fort Blank Range	1.92	units	
		Lab Fort Bl. Av. Rec	74.51	%	
		LFB Duplicate RPD	2.57	%	0-20
	Bis(2-chloroisopropyl)ether	Lab Fort Blank Amt.	100.00	ug/l	
		Lab Fort Blk. Found	58.06	ug/l	
		Lab Fort Blk. % Rec.	58.06	%	40-140
		Dup Lab Fort Bl Amt.	100.00	ug/l	
		Dup Lab Fort Bl. Fnd	55.45	ug/l	
		Dup Lab Fort BI %Rec	55.45	%	
		Lab Fort Blank Range	2.61	units	
		Lab Fort Bl. Av. Rec	56.75	%	
		LFB Duplicate RPD	4.59	%	0-20
	Bis(2-ethylhexyl)phthalate	Lab Fort Blank Amt.	100.00	ug/l	
	, , , , , , , , , , , , , , , , , , , ,	Lab Fort Blk. Found	61.93	ug/l	
		Lab Fort Blk. % Rec.	61.93	%	40-140
		Dup Lab Fort BI Amt.	100.00	ug/l	
		Dup Lab Fort Bl. Fnd	59.23	ug/l	
		Dup Lab Fort BI %Rec	59.23	%	
		Lab Fort Blank Range	2.70	units	
		Lab Fort Bl. Av. Rec	60.58	%	
		LFB Duplicate RPD	4.45	%	0-20
	4-Bromophenyl phenyl ether	Lab Fort Blank Amt.	100.00	ug/l	
		Lab Fort Blk. Found	78.97	ug/l	
		Lab Fort Blk. % Rec.	78.97	%	40-140
		Dup Lab Fort Bl Amt.	100.00	ug/l	
		Dup Lab Fort Bl. Fnd	75.38	ug/l	
		Dup Lab Fort BI %Rec	75.38	%	
		Lab Fort Blank Range	3.59	units	
		Lab Fort Bl. Av. Rec	77.17	%	
		LFB Duplicate RPD	4.65	%	0-20
	Butylbenzylphthalate	Lab Fort Blank Amt.	100.00	ug/l	
		Lab Fort Blk. Found	66.51	ug/l	
		Lab Fort Blk. % Rec.	66.51	%	40-140
		Dup Lab Fort BI Amt.	100.00	ug/l	
		Dup Lab Fort Bl. Fnd	63.39	ug/l	
		Dup Lab Fort BI %Rec	63.39	%	
		Lab Fort Blank Range	3.12	units	
		Lab Fort Bl. Av. Rec	64.95	%	
		LFB Duplicate RPD	4.80	%	0-20
	4-Chloroaniline	Lab Fort Blank Amt.	100.00	ug/l	



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Sample Id	Analysis	QC Analysis	Values	Units	Limits	
FBLANK-91848						
	4-Chloroaniline	Lab Fort Blk. Found	64.47	ug/l		
		Lab Fort Blk. % Rec.	64.47	%	40-140	
		Dup Lab Fort BI Amt.	100.00	ug/l		
		Dup Lab Fort Bl. Fnd	64.65	ug/l		
		Dup Lab Fort BI %Rec	64.65	%		
		Lab Fort Blank Range	0.18	units		
		Lab Fort Bl. Av. Rec	64.56	%		
		LFB Duplicate RPD	0.27	%	0-20	
	2-Chloronaphthalene	Lab Fort Blank Amt.	100.00	ug/l		
		Lab Fort Blk. Found	60.39	ug/l		
		Lab Fort Blk. % Rec.	60.39	%	40-140	
		Dup Lab Fort Bl Amt.	100.00	ug/l		
		Dup Lab Fort Bl. Fnd	58.15	ug/l		
		Dup Lab Fort Bl %Rec	58.15	%		
		Lab Fort Blank Range	2.24	units		
		Lab Fort Bl. Av. Rec	59.27	%		
		LFB Duplicate RPD	3.77	%	0-20	
	4-Chlorophenylphenyl ether	Lab Fort Blank Amt.	100.00	ug/l		
	5 5 5 F 5 7 5 5 5 5 5 5 5 5 5 5 5 5 5 5	Lab Fort Blk. Found	73.14	ug/l		
		Lab Fort Blk. % Rec.	73.14	%	40-140	
		Dup Lab Fort Bl Amt.	100.00	ug/l		
		Dup Lab Fort Bl. Fnd	69.54	ug/l		
		Dup Lab Fort BI %Rec	69.54	%		
		Lab Fort Blank Range	3.60	units		
		Lab Fort Bl. Av. Rec	71.34	%		
		LFB Duplicate RPD	5.04	%	0-20	
	Chrysene	Lab Fort Blank Amt.	100.00	ug/l	0 =0	
	5, y 555	Lab Fort Blk, Found	65.28	ug/l		
		Lab Fort Blk. % Rec.	65.28	%	40-140	
		Dup Lab Fort Bl Amt.	100.00	ug/l		
		Dup Lab Fort Bl. Fnd	62.18	ug/l		
		Dup Lab Fort Bl %Rec	62.18	%		
		Lab Fort Blank Range	3.10	units		
		Lab Fort Bl. Av. Rec	63.73	%		
		LFB Duplicate RPD	4.86	%	0-20	
	Dibenz(a,h)anthracene	Lab Fort Blank Amt.	100.000	ug/l	3 20	
	2.20112(4,11)4/11/11/100110	Lab Fort Blk. Found	75.650	ug/l		
		Lab Fort Blk. % Rec.	75.650	%	40-140	
		Dup Lab Fort Bl Amt.	100.000	ug/l	70-170	
		Dup Lab Fort Bl. Fnd	71.180	ug/l		
		Dup Lab Fort Bl %Rec	71.180	ug/i %		
		Lab Fort Blank Range	4.470	<sup>70</sup> units		
		Lab Fort Bl. Av. Rec		wills		
		Lau Full Di. Av. Rec	73.415	/0		



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Sample Id	Analysis	QC Analysis	Values	Units	Limits	
FBLANK-91848						
	Dibenz(a,h)anthracene	LFB Duplicate RPD	6.088	%	0-20	
	Dibenzofuran	Lab Fort Blank Amt.	100.00	ug/l		
		Lab Fort Blk. Found	74.42	ug/l		
		Lab Fort Blk. % Rec.	74.42	%	40-140	
		Dup Lab Fort BI Amt.	100.00	ug/l		
		Dup Lab Fort Bl. Fnd	71.25	ug/l		
		Dup Lab Fort BI %Rec	71.25	%		
		Lab Fort Blank Range	3.16	units		
		Lab Fort Bl. Av. Rec	72.83	%		
		LFB Duplicate RPD	4.35	%	0-20	
	3,3-Dichlorobenzidine	Lab Fort Blank Amt.	100.00	ug/l		
		Lab Fort Blk. Found	68.86	ug/l		
		Lab Fort Blk. % Rec.	68.86	%	40-140	
		Dup Lab Fort BI Amt.	100.00	ug/l		
		Dup Lab Fort Bl. Fnd	66.59	ug/l		
		Dup Lab Fort BI %Rec	66.59	%		
		Lab Fort Blank Range	2.26	units		
		Lab Fort Bl. Av. Rec	67.73	%		
		LFB Duplicate RPD	3.33	%	0-20	
	Diethylphthalate	Lab Fort Blank Amt.	100.00	ug/l		
	71	Lab Fort Blk. Found	71.14	ug/l		
		Lab Fort Blk. % Rec.	71.14	%	40-140	
		Dup Lab Fort Bl Amt.	100.00	ug/l		
		Dup Lab Fort Bl. Fnd	67.45	ug/l		
		Dup Lab Fort Bl %Rec	67.45	%		
		Lab Fort Blank Range	3.67	units		
		Lab Fort Bl. Av. Rec	69.30	%		
		LFB Duplicate RPD	5.31	%	0-20	
	Dimethylphthalate	Lab Fort Blank Amt.	100.00	ug/l		
	, ,,,	Lab Fort Blk. Found	77.84	ug/l		
		Lab Fort Blk. % Rec.	77.84	%	40-140	
		Dup Lab Fort Bl Amt.	100.00	ug/l		
		Dup Lab Fort Bl. Fnd	74.36	ug/l		
		Dup Lab Fort BI %Rec	74.36	%		
		Lab Fort Blank Range	3.47	units		
		Lab Fort Bl. Av. Rec	76.09	%		
		LFB Duplicate RPD	4.57	%	0-50	
	Di-n-butylphthalate	Lab Fort Blank Amt.	100.00	ug/l	- 00	
		Lab Fort Blk. Found	68.48	ug/l		
		Lab Fort Blk. % Rec.	68.48	%	40-140	
		Dup Lab Fort BI Amt.	100.00	ug/l	.5 1 10	
		Dup Lab Fort Bl. Fnd	64.53	ug/l		
		Dup Lab Fort Bl %Rec	64.53	%		



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QC Batch Number:	GCMS/SEMI-11942				
ample Id	Analysis	QC Analysis	Values	Units	Limits
BLANK-91848					
	Di-n-butylphthalate	Lab Fort Blank Range	3.94	units	
		Lab Fort Bl. Av. Rec	66.50	%	
		LFB Duplicate RPD	5.93	%	0-20
	2,4-Dinitrotoluene	Lab Fort Blank Amt.	100.00	ug/l	
		Lab Fort Blk. Found	81.56	ug/l	
		Lab Fort Blk. % Rec.	81.56	%	40-140
		Dup Lab Fort Bl Amt.	100.00	ug/l	
		Dup Lab Fort Bl. Fnd	66.59	ug/l	
		Dup Lab Fort BI %Rec	66.59	%	
		Lab Fort Blank Range	14.97	units	
		Lab Fort Bl. Av. Rec	74.08	%	
		LFB Duplicate RPD	20.20	%	0-20
	2,6-Dinitrotoluene	Lab Fort Blank Amt.	100.00	ug/l	
		Lab Fort Blk. Found	63.90	ug/l	
		Lab Fort Blk. % Rec.	63.90	%	40-140
		Dup Lab Fort Bl Amt.	100.00	ug/l	
		Dup Lab Fort Bl. Fnd	60.27	ug/l	
		Dup Lab Fort BI %Rec	60.27	%	
		Lab Fort Blank Range	3.63	units	
		Lab Fort Bl. Av. Rec	62.08	%	
		LFB Duplicate RPD	5.84	%	0-20
	1,2-Diphenylhydrazine (as Azobenzene)	Lab Fort Blank Amt.	100.00	ug/l	
		Lab Fort Blk. Found	87.27	ug/l	
		Lab Fort Blk. % Rec.	87.27	%	40-140
		Dup Lab Fort Bl Amt.	100.00	ug/l	
		Dup Lab Fort Bl. Fnd	81.95	ug/l	
		Dup Lab Fort BI %Rec	81.95	%	
		Lab Fort Blank Range	5.32	units	
		Lab Fort Bl. Av. Rec	84.61	%	
		LFB Duplicate RPD	6.28	%	0-20
	Di-n-octylphthalate	Lab Fort Blank Amt.	100.00	ug/l	
		Lab Fort Blk. Found	75.50	ug/l	
		Lab Fort Blk. % Rec.	75.50	%	40-140
		Dup Lab Fort Bl Amt.	100.00	ug/l	
		Dup Lab Fort Bl. Fnd	71.09	ug/l	
		Dup Lab Fort BI %Rec	71.09	%	
		Lab Fort Blank Range	4.40	units	
		Lab Fort Bl. Av. Rec	73.29	%	
		LFB Duplicate RPD	6.01	%	0-20
	Fluoranthene	Lab Fort Blank Amt.	100.00	ug/l	
		Lab Fort Blk. Found	68.16	ug/l	
		Lab Fort Blk. % Rec.	68.16	%	40-140
		Dup Lab Fort Bl Amt.	100.00	ug/l	



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Sample Id	Analysis	QC Analysis	Values	Units	Limits
LFBLANK-91848					
	Fluoranthene	Dup Lab Fort Bl. Fnd	64.06	ug/l	
		Dup Lab Fort BI %Rec	64.06	%	
		Lab Fort Blank Range	4.09	units	
		Lab Fort Bl. Av. Rec	66.11	%	
		LFB Duplicate RPD	6.20	%	0-20
	Fluorene	Lab Fort Blank Amt.	100.00	ug/l	
		Lab Fort Blk. Found	67.48	ug/l	
		Lab Fort Blk. % Rec.	67.48	%	40-140
		Dup Lab Fort BI Amt.	100.00	ug/l	
		Dup Lab Fort Bl. Fnd	63.62	ug/l	
		Dup Lab Fort BI %Rec	63.62	%	
		Lab Fort Blank Range	3.85	units	
		Lab Fort Bl. Av. Rec	65.55	%	
		LFB Duplicate RPD	5.88	%	0-20
	Hexachlorobenzene	Lab Fort Blank Amt.	100.00	ug/l	
		Lab Fort Blk. Found	77.97	ug/l	
		Lab Fort Blk. % Rec.	77.97	%	40-140
		Dup Lab Fort BI Amt.	100.00	ug/l	
		Dup Lab Fort Bl. Fnd	74.77	ug/l	
		Dup Lab Fort BI %Rec	74.77	%	
		Lab Fort Blank Range	3.19	units	
		Lab Fort Bl. Av. Rec	76.37	%	
		LFB Duplicate RPD	4.19	%	0-20
	Hexachlorobutadiene	Lab Fort Blank Amt.	100.00	ug/l	
		Lab Fort Blk. Found	68.48	ug/l	
		Lab Fort Blk. % Rec.	68.48	%	40-140
		Dup Lab Fort BI Amt.	100.00	ug/l	
		Dup Lab Fort Bl. Fnd	66.11	ug/l	
		Dup Lab Fort BI %Rec	66.11	%	
		Lab Fort Blank Range	2.37	units	
		Lab Fort Bl. Av. Rec	67.30	%	
		LFB Duplicate RPD	3.53	%	0-20
	Hexachlorocyclopentadiene	Lab Fort Blank Amt.	100.00	ug/l	
		Lab Fort Blk. Found	61.15	ug/l	
		Lab Fort Blk. % Rec.	61.15	%	30-140
		Dup Lab Fort BI Amt.	100.00	ug/l	
		Dup Lab Fort Bl. Fnd	62.18	ug/l	
		Dup Lab Fort BI %Rec	62.18	%	
		Lab Fort Blank Range	1.03	units	
		Lab Fort Bl. Av. Rec	61.66	%	
		LFB Duplicate RPD	1.67	%	0-50
	Hexachloroethane	Lab Fort Blank Amt.	100.00	ug/l	
		Lab Fort Blk. Found	58.49	ug/l	
				-3	



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FBLANK-91848					
	Hexachloroethane	Lab Fort Blk. % Rec.	58.49	%	40-140
		Dup Lab Fort BI Amt.	100.00	ug/l	
		Dup Lab Fort Bl. Fnd	56.32	ug/l	
		Dup Lab Fort BI %Rec	56.32	%	
		Lab Fort Blank Range	2.16	units	
		Lab Fort Bl. Av. Rec	57.40	%	
		LFB Duplicate RPD	3.78	%	0-50
	Indeno(1,2,3-cd)pyrene	Lab Fort Blank Amt.	100.000	ug/l	
		Lab Fort Blk. Found	80.880	ug/l	
		Lab Fort Blk. % Rec.	80.880	%	40-140
		Dup Lab Fort Bl Amt.	100.000	ug/l	
		Dup Lab Fort Bl. Fnd	76.660	ug/l	
		Dup Lab Fort BI %Rec	76.660	%	
		Lab Fort Blank Range	4.220	units	
		Lab Fort Bl. Av. Rec	78.770	%	
		LFB Duplicate RPD	5.357	%	0-50
	Isophorone	Lab Fort Blank Amt.	100.00	ug/l	
		Lab Fort Blk. Found	78.89	ug/l	
		Lab Fort Blk. % Rec.	78.89	%	40-140
		Dup Lab Fort Bl Amt.	100.00	ug/l	
		Dup Lab Fort Bl. Fnd	77.80	ug/l	
		Dup Lab Fort BI %Rec	77.80	%	
		Lab Fort Blank Range	1.09	units	
		Lab Fort Bl. Av. Rec	78.34	%	
		LFB Duplicate RPD	1.39	%	0-20
	2-Methylnaphthalene	Lab Fort Blank Amt.	100.00	ug/l	
	,	Lab Fort Blk. Found	65.28	ug/l	
		Lab Fort Blk. % Rec.	65.28	%	40-140
		Dup Lab Fort Bl Amt.	100.00	ug/l	
		Dup Lab Fort Bl. Fnd	63.69	ug/l	
		Dup Lab Fort BI %Rec	63.69	%	
		Lab Fort Blank Range	1.59	units	
		Lab Fort Bl. Av. Rec	64.48	%	
		LFB Duplicate RPD	2.46	%	0-20
	2-Nitroaniline	Lab Fort Blank Amt.	100.00	ug/l	
		Lab Fort Blk. Found	79.48	ug/l	
		Lab Fort Blk. % Rec.	79.48	%	40-140
		Dup Lab Fort Bl Amt.	100.00	ug/l	<del>-</del>
		Dup Lab Fort Bl. Fnd	76.73	ug/l	
		Dup Lab Fort BI %Rec	76.73	%	
		Lab Fort Blank Range	2.76	units	
		Lab Fort Bl. Av. Rec	78.11	%	



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LFBLANK-91848					
	3-Nitroaniline	Lab Fort Blank Amt.	100.00	ug/l	
		Lab Fort Blk. Found	57.45	ug/l	
		Lab Fort Blk. % Rec.	57.45	%	40-140
		Dup Lab Fort BI Amt.	100.00	ug/l	
		Dup Lab Fort Bl. Fnd	55.35	ug/l	
		Dup Lab Fort BI %Rec	55.35	%	
		Lab Fort Blank Range	2.10	units	
		Lab Fort Bl. Av. Rec	56.40	%	
		LFB Duplicate RPD	3.72	%	0-20
	Nitrobenzene	Lab Fort Blank Amt.	100.00	ug/l	
		Lab Fort Blk. Found	73.70	ug/l	
		Lab Fort Blk. % Rec.	73.70	%	40-140
		Dup Lab Fort BI Amt.	100.00	ug/l	
		Dup Lab Fort Bl. Fnd	71.81	ug/l	
		Dup Lab Fort BI %Rec	71.81	%	
		Lab Fort Blank Range	1.88	units	
		Lab Fort Bl. Av. Rec	72.75	%	
		LFB Duplicate RPD	2.59	%	0-20
	N-Nitroso-di-n-propylamine	Lab Fort Blank Amt.	100.00	ug/l	
		Lab Fort Blk. Found	70.38	ug/l	
		Lab Fort Blk. % Rec.	70.38	%	40-140
		Dup Lab Fort BI Amt.	100.00	ug/l	
		Dup Lab Fort Bl. Fnd	67.40	ug/l	
		Dup Lab Fort BI %Rec	67.40	%	
		Lab Fort Blank Range	2.97	units	
		Lab Fort Bl. Av. Rec	68.89	%	
		LFB Duplicate RPD	4.32	%	0-20
	N-Nitrosodiphenylamine	Lab Fort Blank Amt.	100.00	ug/l	
		Lab Fort Blk. Found	88.94	ug/l	
		Lab Fort Blk. % Rec.	88.94	%	40-140
		Dup Lab Fort BI Amt.	100.00	ug/l	
		Dup Lab Fort Bl. Fnd	84.24	ug/l	
		Dup Lab Fort BI %Rec	84.24	%	
		Lab Fort Blank Range	4.70	units	
		Lab Fort Bl. Av. Rec	86.59	%	
		LFB Duplicate RPD	5.42	%	0-20
	Phenanthrene	Lab Fort Blank Amt.	100.00	ug/l	
		Lab Fort Blk. Found	75.39	ug/l	
		Lab Fort Blk. % Rec.	75.39	%	40-140
		Dup Lab Fort Bl Amt.	100.00	ug/l	
		Dup Lab Fort Bl. Fnd	71.98	ug/l	
		Dup Lab Fort BI %Rec	71.98	%	
		Lab Fort Blank Range	3.40	units	



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_FBLANK-91848					
	Phenanthrene	Lab Fort Bl. Av. Rec	73.69	%	
		LFB Duplicate RPD	4.61	%	0-20
	Pyrene	Lab Fort Blank Amt.	100.00	ug/l	
		Lab Fort Blk. Found	67.40	ug/l	
		Lab Fort Blk. % Rec.	67.40	%	40-140
		Dup Lab Fort Bl Amt.	100.00	ug/l	
		Dup Lab Fort Bl. Fnd	65.30	ug/l	
		Dup Lab Fort BI %Rec	65.30	%	
		Lab Fort Blank Range	2.10	units	
		Lab Fort Bl. Av. Rec	66.34	%	
		LFB Duplicate RPD	3.16	%	0-20
	1,2,4-Trichlorobenzene	Lab Fort Blank Amt.	100.00	ug/l	
		Lab Fort Blk. Found	71.25	ug/l	
		Lab Fort Blk. % Rec.	71.25	%	40-140
		Dup Lab Fort Bl Amt.	100.00	ug/l	
		Dup Lab Fort Bl. Fnd	68.68	ug/l	
		Dup Lab Fort BI %Rec	68.68	%	
		Lab Fort Blank Range	2.57	units	
		Lab Fort Bl. Av. Rec	69.96	%	
		LFB Duplicate RPD	3.67	%	0-20
	4-Chloro-3-methylphenol	Lab Fort Blank Amt.	100.00	ug/l	
	•	Lab Fort Blk. Found	71.41	ug/l	
		Lab Fort Blk. % Rec.	71.41	%	30-130
		Dup Lab Fort Bl Amt.	100.00	ug/l	
		Dup Lab Fort Bl. Fnd	70.36	ug/l	
		Dup Lab Fort BI %Rec	70.36	%	
		Lab Fort Blank Range	1.05	units	
		Lab Fort Bl. Av. Rec	70.88	%	
		LFB Duplicate RPD	1.48	%	0-20
	2-Chlorophenol	Lab Fort Blank Amt.	100.00	ug/l	
	·	Lab Fort Blk. Found	60.46	ug/l	
		Lab Fort Blk. % Rec.	60.46	%	30-130
		Dup Lab Fort Bl Amt.	100.00	ug/l	
		Dup Lab Fort Bl. Fnd	58.59	ug/l	
		Dup Lab Fort BI %Rec	58.59	%	
		Lab Fort Blank Range	1.87	units	
		Lab Fort Bl. Av. Rec	59.52	%	
		LFB Duplicate RPD	3.14	%	0-20
	2,4-Dichlorophenol	Lab Fort Blank Amt.	100.00	ug/l	
	·	Lab Fort Blk. Found	69.98	ug/l	
		Lab Fort Blk. % Rec.	69.98	%	30-130
		Dup Lab Fort Bl Amt.	100.00	ug/l	
		Dup Lab Fort Bl. Fnd	69.34	ug/l	



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LFBLANK-91848					
	2,4-Dichlorophenol	Dup Lab Fort BI %Rec	69.34	%	
		Lab Fort Blank Range	0.64	units	
		Lab Fort Bl. Av. Rec	69.67	%	
		LFB Duplicate RPD	0.91	%	0-20
	2,4-Dimethylphenol	Lab Fort Blank Amt.	100.00	ug/l	
		Lab Fort Blk. Found	65.29	ug/l	
		Lab Fort Blk. % Rec.	65.29	%	30-130
		Dup Lab Fort BI Amt.	100.00	ug/l	
		Dup Lab Fort Bl. Fnd	66.23	ug/l	
		Dup Lab Fort BI %Rec	66.23	%	
		Lab Fort Blank Range	0.93	units	
		Lab Fort Bl. Av. Rec	65.76	%	
		LFB Duplicate RPD	1.42	%	0-20
	4,6-Dinitro-2-methylphenol	Lab Fort Blank Amt.	100.00	ug/l	
	,	Lab Fort Blk. Found	72.45	ug/l	
		Lab Fort Blk. % Rec.	72.45	%	30-130
		Dup Lab Fort Bl Amt.	100.00	ug/l	
		Dup Lab Fort Bl. Fnd	62.92	ug/l	
		Dup Lab Fort Bl %Rec	62.92	%	
		Lab Fort Blank Range	9.54	units	
		Lab Fort Bl. Av. Rec	67.69	%	
		LFB Duplicate RPD	14.09	%	0-50
	2,4-Dinitrophenol	Lab Fort Blank Amt.	100.00	ug/l	
	,	Lab Fort Blk. Found	74.56	ug/l	
		Lab Fort Blk. % Rec.	74.56	%	30-130
		Dup Lab Fort Bl Amt.	100.00	ug/l	
		Dup Lab Fort Bl. Fnd	67.98	ug/l	
		Dup Lab Fort Bl %Rec	67.98	%	
		Lab Fort Blank Range	6.58	units	
		Lab Fort Bl. Av. Rec	71.28	%	
		LFB Duplicate RPD	9.23	%	0-50
	o-cresol	Lab Fort Blank Amt.	100.00	ug/l	
		Lab Fort Blk. Found	59.31	ug/l	
		Lab Fort Blk. % Rec.	59.31	%	30-130
		Dup Lab Fort Bl Amt.	100.00	ug/l	
		Dup Lab Fort Bl. Fnd	58.47	ug/l	
		Dup Lab Fort BI %Rec	58.47	%	
		Lab Fort Blank Range	0.83	units	
		Lab Fort Bl. Av. Rec	58.89	%	
		LFB Duplicate RPD	1.42	%	0-20
	m & p-Cresol(s)	Lab Fort Blank Amt.	100.00	ug/l	0.20
	a p 0.0001(0)	Lab Fort Blk. Found	60.73	ug/l	
		Lab Fort Blk. % Rec.	60.73	%	30-130



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LFBLANK-91848						
	m & p-Cresol(s)	Dup Lab Fort Bl Amt.	100.00	ug/l		
		Dup Lab Fort Bl. Fnd	60.71	ug/l		
		Dup Lab Fort BI %Rec	60.71	%		
		Lab Fort Blank Range	0.01	units		
		Lab Fort Bl. Av. Rec	60.72	%		
		LFB Duplicate RPD	0.03	%	0-20	
	2-Nitrophenol	Lab Fort Blank Amt.	100.00	ug/l		
		Lab Fort Blk. Found	71.88	ug/l		
		Lab Fort Blk. % Rec.	71.88	%	30-130	
		Dup Lab Fort BI Amt.	100.00	ug/l		
		Dup Lab Fort Bl. Fnd	70.59	ug/l		
		Dup Lab Fort BI %Rec	70.59	%		
		Lab Fort Blank Range	1.28	units		
		Lab Fort Bl. Av. Rec	71.23	%		
		LFB Duplicate RPD	1.79	%	0-20	
	4-Nitrophenol	Lab Fort Blank Amt.	100.00	ug/l		
		Lab Fort Blk. Found	10.96	ug/l		
		Lab Fort Blk. % Rec.	10.96	%	10-130	
		Dup Lab Fort Bl Amt.	100.00	ug/l		
		Dup Lab Fort Bl. Fnd	10.51	ug/l		
		Dup Lab Fort BI %Rec	10.51	%		
		Lab Fort Blank Range	0.44	units		
		Lab Fort Bl. Av. Rec	10.73	%		
		LFB Duplicate RPD	4.19	%	0-50	
	Phenol	Lab Fort Blank Amt.	100.00	ug/l		
		Lab Fort Blk. Found	26.54	ug/l		
		Lab Fort Blk. % Rec.	26.54	%	20-130	
		Dup Lab Fort BI Amt.	100.00	ug/l		
		Dup Lab Fort Bl. Fnd	26.51	ug/l		
		Dup Lab Fort BI %Rec	26.51	%		
		Lab Fort Blank Range	0.02	units		
		Lab Fort Bl. Av. Rec	26.52	%		
		LFB Duplicate RPD	0.11	%	0-20	
	2,4,5-Trichlorophenol	Lab Fort Blank Amt.	100.00	ug/l		
		Lab Fort Blk. Found	82.21	ug/l		
		Lab Fort Blk. % Rec.	82.21	%	30-130	
		Dup Lab Fort Bl Amt.	100.00	ug/l		
		Dup Lab Fort Bl. Fnd	72.91	ug/l		
		Dup Lab Fort Bl %Rec	72.91	%		
		Lab Fort Blank Range	9.30	units		
		Lab Fort Bl. Av. Rec	77.56	%		
		LFB Duplicate RPD	11.99	%	0-20	
	2,4,6-Trichlorophenol	Lab Fort Blank Amt.	100.00	ug/l		



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FBLANK-91848						
	2,4,6-Trichlorophenol	Lab Fort Blk. Found	72.23	ug/l		
		Lab Fort Blk. % Rec.	72.23	%	30-130	
		Dup Lab Fort Bl Amt.	100.00	ug/l		
		Dup Lab Fort Bl. Fnd	68.17	ug/l		
		Dup Lab Fort BI %Rec	68.17	%		
		Lab Fort Blank Range	4.07	units		
		Lab Fort Bl. Av. Rec	70.20	%		
		LFB Duplicate RPD	5.79	%	0-50	
	Pentachlorophenol	Lab Fort Blank Amt.	100.00	ug/l		
		Lab Fort Blk. Found	63.52	ug/l		
		Lab Fort Blk. % Rec.	63.52	%	30-130	
		Dup Lab Fort Bl Amt.	100.00	ug/l		
		Dup Lab Fort Bl. Fnd	63.29	ug/l		
		Dup Lab Fort BI %Rec	63.29	%		
		Lab Fort Blank Range	0.22	units		
		Lab Fort Bl. Av. Rec	63.40	%		
		LFB Duplicate RPD	0.36	%	0-50	
	Pyridine	Lab Fort Blank Amt.	100.0	ug/l		
	•	Lab Fort Blk. Found	37.5	ug/l		
		Lab Fort Blk. % Rec.	37.5	%	10-140	
		Dup Lab Fort Bl Amt.	100.0	ug/l		
		Dup Lab Fort Bl. Fnd	33.1	ug/l		
		Dup Lab Fort Bl %Rec	33.1	%		
		Lab Fort Blank Range	4.3	units		
		Lab Fort Bl. Av. Rec	35.3	%		
		LFB Duplicate RPD	12.3	%	0-50	
	Benzo(k)fluoranthene	Lab Fort Blank Amt.	100.000	ug/l		
		Lab Fort Blk. Found	72.730	ug/l		
		Lab Fort Blk. % Rec.	72.730	%	40-140	
		Dup Lab Fort BI Amt.	100.000	ug/l		
		Dup Lab Fort Bl. Fnd	64.769	ug/l		
		Dup Lab Fort BI %Rec	64.769	%		
		Lab Fort Blank Range	7.959	units		
		Lab Fort Bl. Av. Rec	68.750	%		
		LFB Duplicate RPD	11.578	%	0-20	
	4-Nitroaniline	Lab Fort Blank Amt.	100.00	ug/l		
		Lab Fort Blk. Found	70.02	ug/l		
		Lab Fort Blk. % Rec.	70.02	%	40-140	
		Dup Lab Fort Bl Amt.	100.00	ug/l	.50	
		Dup Lab Fort Bl. Fnd	67.44	ug/l		
		Dup Lab Fort BI %Rec	67.44	%		
		Lab Fort Blank Range	2.58	units		
		Eas Fort Diality Range	2.00			



# QC SUMMARY REPORT

SAMPLE QC: Sample Results with Duplicates

BATCH QC: Lab fortified Blanks and Duplicates

Sample Matrix Spikes and Matrix Spike Duplicates

Standard Reference Materials and Duplicates

Report Date:	2/20/2009	Lims Bat #: LIMT-23271	Page 17 of 19		
QC Batch Number:	GCMS/SEMI-11942				
Sample Id	Analysis	QC Analysis	Values	Units	Limits
LFBLANK-91848					
	4-Nitroaniline	LFB Duplicate RPD	3.75	%	0-20
	Acetophenone	Lab Fort Blank Amt.	100.00	ug/l	
		Lab Fort Blk. Found	71.59	ug/l	
		Lab Fort Blk. % Rec.	71.59	%	40-140
		Dup Lab Fort Bl Amt.	100.00	ug/l	
		Dup Lab Fort Bl. Fnd	68.70	ug/l	
		Dup Lab Fort BI %Rec	68.70	%	
		Lab Fort Blank Range	2.87	units	
		Lab Fort Bl. Av. Rec	70.15	%	
		LFB Duplicate RPD	4.10	%	0-20
	Carbazole	Lab Fort Blank Amt.	100.00	ug/l	
		Lab Fort Blk. Found	74.80	ug/l	
		Lab Fort Blk. % Rec.	74.80	%	40-140
		Dup Lab Fort Bl Amt.	100.00	ug/l	
		Dup Lab Fort Bl. Fnd	70.97	ug/l	
		Dup Lab Fort BI %Rec	70.97	%	
		Lab Fort Blank Range	3.83	units	
		Lab Fort Bl. Av. Rec	72.88	%	
		LFB Duplicate RPD	5.25	%	0-20
	Pentachloronitribenzene	Lab Fort Blank Amt.	100.00	ug/l	
		Lab Fort Blk. Found	79.26	ug/l	
		Lab Fort Blk. % Rec.	79.26	%	40-140
		Dup Lab Fort Bl Amt.	100.00	ug/l	
		Dup Lab Fort Bl. Fnd	75.86	ug/l	
		Dup Lab Fort BI %Rec	75.86	%	
		Lab Fort Blank Range	3.40	units	
		Lab Fort Bl. Av. Rec	77.56	%	
		LFB Duplicate RPD	4.38	%	
	1,2,4,5-Tetrachlorobenzene	Lab Fort Blank Amt.	25.00	ug/l	
		Lab Fort Blk. Found	19.10	ug/l	
		Lab Fort Blk. % Rec.	76.40	%	40-140
		Dup Lab Fort Bl Amt.	100.00	ug/l	
		Dup Lab Fort Bl. Fnd	18.43	ug/l	
		Dup Lab Fort BI %Rec	18.43	%	
		Lab Fort Blank Range	57.97	units	
		Lab Fort Bl. Av. Rec	47.41	%	
		LFB Duplicate RPD	3.57	%	



#### **QC SUMMARY REPORT**

SAMPLE QC: Sample Results with Duplicates

BATCH QC: Lab fortified Blanks and Duplicates

Sample Matrix Spikes and Matrix Spike Duplicates

Standard Reference Materials and Duplicates

Method Blanks

Report Date: 2/20/2009 Lims Bat #: LIMT-23271 Page 18 of 19

NOTES:

QC Batch No.: GCMS/SEMI-11942

Sample ID : 09B04122 Analysis : Phenol-d6

SURROGATE RECOVERY OUTSIDE OF CON-TEST CONTROL LIMITS, BUT WITHIN

METHOD REQUIREMENTS.

QC Batch No. : GCMS/SEMI-11942
Sample ID : LFBLANK-91848
Analysis : 2,4-Dinitrotoluene

LABORATORY FORTIFIED BLANK DUPLICATE RPD OUTSIDE OF CONTROL LIMITS. REDUCED

PRECISION ANTICIPATED FOR ANY REPORTED RESULTS FOR THIS COMPOUND.

QC Batch No. : GCMS/SEMI-11942 Sample ID : LFBLANK-91848 Analysis : Benzoic Acid

LABORATORY FORTIFIED BLANK RECOVERY OUTSIDE OF CONTROL LIMITS. ANY REPORTED RESULT FOR THIS COMPOUND IN THIS BATCH IS LIKELY TO BE BIASED ON THE LOW SIDE.



#### **QC SUMMARY REPORT**

SAMPLE QC: Sample Results with Duplicates

BATCH QC: Lab fortified Blanks and Duplicates

Sample Matrix Spikes and Matrix Spike Duplicates

Standard Reference Materials and Duplicates

Method Blanks

Report Date: 2/20/2009 Lims Bat #: LIMT-23271 Page 19 of 19

OUALITY CONTROL DEFINITIONS AND ABBREVIATIONS

This is the number assigned to all samples analyzed together that QC BATCH NUMBER

would be subject to comparison with a particular set of Quality

Control Data.

LIMITS Upper and Lower Control Limits for the QC ANALYSIS Reported. All

values normally would fall within these statistically determined limits, unless there is an unusual circumstance that would be documented in a NOTE appearing on the last page of the QC  $\operatorname{SUMMARY}$ 

REPORT. Not all QC results will have Limits defined.

Sample Amount Amount of analyte found in a sample.

Method Blank that has been taken though all the steps of the Blank

analysis.

LFBLANK Laboratory Fortified Blank (a control sample)

STDADD Standard Added (a laboratory control sample)

Amount of analyte spiked into a sample Matrix Spk Amt Added

MS Amt Measured Amount of analyte found including amount that was spiked

% Recovery of spiked amount in sample. Matrix Spike % Rec.

Duplicate Value The result from the Duplicate analysis of the sample.

Duplicate RPD The Relative Percent Difference between two Duplicate Analyses.

The % Recovery for non-environmental compounds (surrogates) Surrogate Recovery

spiked into samples to determine the performance of

analytical methods.

Surrogate Recovery on the Electrolytic Conductivity Detector. Sur. Recovery (ELCD)

Sur. Recovery (PID) Surrogate Recovery on the Photoionization Detector.

Standard Measured Amount measured for a laboratory control sample

Standard Amt Added

Known value for a laboratory control sample % recovered for a laboratory control sample with a known value. Standard % Recovery

Laboratory Fortified Blank Amount Added Lab Fort Blank Amt

Lab Fort Blk. Found Laboratory Fortified Blank Amount Found

Lab Fort Blk % Rec Laboratory Fortified Blank % Recovered

Duplicate Laboratory Fortified Blank Amount Added Dup Lab Fort Bl Amt Duplicate Laboratory Fortified Blank Amount Found Dup Lab Fort Bl Fnd

Duplicate Laboratory Fortified Blank % Recovery Dup Lab Fort Bl % Rec

Lab Fort Blank Range Laboratory Fortified Blank Range (Absolute value of difference

between recoveries for Lab Fortified Blank and Lab Fortified

Blank Duplicate).

Lab Fort Bl. Av. Rec. Laboratory Fortified Blank Average Recovery

Duplicate Sample Amt Sample Value for Duplicate used with Matrix Spike Duplicate

MSD Amount Added Matrix Spike Duplicate Amount Added (Spiked)

MSD Amt Measured Matrix Spike Duplicate Amount Measured

MSD % Recovery Matrix Spike Duplicate % Recovery

MSD Range Absolute difference between Matrix Spike and Matrix Spike

Duplicate Recoveries

MADEP INCP ANALYTICAL METHOD REPORT CERTIFICATION FORM							
Lab	oratory Name: C0	DN-TEST Analyti	cal Laboratory	A STATE OF THE STA	Project #	LIW	UT- 23271
Proj	ect Location: Bro	okside terrace	, Southbridge, 1	NN	MADEP F	RTN1:	
This	This Form provides certifications for the following data set: [list Laboratory Sample ID Number(s)]						
	09804122-09804123						
Sam	ple Matrices: 🗴	LGroundwater 🗆	Soil/Sediment 🗆 I	Drinking Water	☐ Other: _		
MC	P SW-846	8260B ( )	8151A()	8330 ( )	6010B	( )	7470A/1A ( )
Teror Sev-040				9014M <sup>2</sup> ()			
As specified in MADEP 8082 ( ) 8021B ( ) EPH ( ) 7000 S <sup>3</sup> ( ) 7196A (					7196A ( )		
Analy	Compendium of Analytical Methods.  1 List Release Tracking Number (RTN), if known 2 M – SW-846 Method 9014 or MADEP Physiologically Available Cyanide (PAC) Method 3 S – SW-846 Methods 7000 Series List individual method and analyte.						(PAC) Method
Ana	affirmative respo	onse to questior	ns A, B, C and D is	required for "l	Presumptiv	∕e Ce	rtainty" status
A			he laboratory in a sustody documentat			N Y	′es □ No¹
В	Were all QA/QC procedures required for the specified analytical method(s)						
С	for "Presumptiv (d) of the MADE	e Certainty", as d EP document CA	eport meet all the and described in Section IM VII A, "Quality A sition and Reporting	n 2.0 (a), (b), (c .ssurance and 0	and Quality	X	Yes ∃ No¹
D			Vas the VPH or EPI (see Section 11.3 or				Yes ∃ No ¹
	A response to q	uestions E and	F below is require	d for "Presump	tive Certa	inty"	status
E	Were all analytical QC performance standards and recommendations for the specified methods achieved? □ Yes X No¹						
F	Were results for all analyte-list compounds/elements for the specified   ★Yes □ No¹  **Tes □ No¹						
All Negative responses must be addressed in an attached Environmental Laboratory case narrative.							
I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.							
Si gna	ture: M	Curl		Position: Ass	istant Lab	orato	ory Director
Printed Name: Michael Erickson Date: 2/20/09							

CAM VII A, rev. 3.2

によります。

ANALYTICAL LABORATORY

Phone: 413-525-2332 CHAIN-OF Fax: 413-525-6405

CHAIN OF CUSTODY RECORD

39 SPRUCE ST, 2ND FLOOR EAST LONGMEADOW, MA 01028

Page \_\_\_\_\_ of \_\_\_\_

IIIIIII ANALYTICAL LABORATORY	TORY Email: Info@contestlabs.com	is.com		-		-	
	www.contestlabs.com		1100	&			# of containers
dense: 106 South Street	ioninental, inc.	Project # $M_{\star}$ $M_$	42(2) 11				~Cont Code
	0 0004	Client PO#	12 - 23 J.X.	e/	ANALYSIS REQUESTED	ESTED	-Cont, Code:
Copyright State of the State of				lev			A=amber glass
ttention: Edith Hutchinson / Michelle Mirenda	ichelle Mirenda		neck one):	J/8			G≖glass.
Project Location: Markaine Tomake	Tealore So Whatelose The	Fax #:	EMAIL WEBSITE CLIENT	Son			P=plastic ST=sterile
<b>\</b>	, ,	Email:		// 			V= vial
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roposal Provided? (For Billing purposes)	poses)			) -/			T=tedlar bag
yesproposal date	date	Date Sampled	-	H H			O=Other
ield ID Sample Description	Lab # 098	Start Stop Date/Time Date/Time	Comp- osite Grab *Matrix Code	82			
on Sw. 1	のよう	2/11/69 1090	511				Comments:
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telinquished by: (signature)	Date/Time!	Turnaround  24 Hour*	Detection Limit Requirements Regulations?	<u>uirements</u>	*Matrix Code: GW= groundwater	I = Iced X = Na	X = Na hydroxide
Received by (signature)	Date/Time:	48 Hour*	,		<b>WW</b> = wastewater	•	T = Na thiosulfate
Land The Market	243.09 160	72 Hour*	Data Enhancement Project?	V UN	DW= drinking water	M = Methanol	
Relinquished by: (signature)	Date/Time: 2/3 ×9 17 10	Other**	(MA MCP sites only) Special Requirements or DI	s. See	A = air S = soil/solid	S = Sulfuric Acid	
Received by: (signature)	Date/Time:	Date needed**	13th and 7K	fox she	SL = sludge O = other	B = Sodium bisulfate O = Other	
The second of th	L				TOWARD		

www.contestlabs.com



# Sample Receipt Checklist

39 Spruce St. East Longmeadow, MA. 01028

P: 413-525-2332 F: 413-525-6405

CLIENT NAME: GZA		_ RECEIVED BY: W DATE: 2/13/09
1) Was the chain(s) of custody 2) Does the chain agree with the If not, explain:	-	gned? Yes No
3) Are all the samples in good of If not, explain:	condition?	Yes No
4) How were the samples recei	ved:	
On Ice Direct from	Sampling	Ambient In Cooler(s)
Were the samples received in 1	-	
Temperature °C by Temp blank _		Temperature °C by Temp gun
5) Are there Dissolved samples Who was notified	for the lab to filter?	Yes (No
6) Are there any samples "On H		Yes (No. Stored where:
7) Are there any RUSH or SHOF		
Who was notified		·
8) Location where samples are	stored:	Permission to subcontract samples? Yes No
of Location where samples are	19B	(Walk-in clients only) if not already approved
		Client Signature:
	Containers s	ent in to Con-Test
	# of containers	# of containers
1 Liter Amber		8 oz clear jar
500 mL Amber		4 oz clear jar
250 mL Amber (8oz amber)		2 oz clear jar
1 Liter Plastic		Other glass jar
500 mL Plastic		Plastic Bag / Ziploc
250 mL plastic		Air Cassette
40 mL Vial - type listed below		Brass Sleeves
Colisure / bacteria bottle		Tubes
Dissolved Oxygen bottle		Summa Cans
Flashpoint bottle		Regulators
Encore		Other
		Other
Laboratory Comments:		
40 mL vials: # HCl	# Methanol	
# Bisulfate	# DI Water	Time and Date Frozen:
# Thiosulfate	Unpreserved	
Do all samples have the proper	pH: Yes No N/A	



#### CERTIFICATE OF ANALYSIS

GZA GeoEnvironmental Labs Attn: Ms. Michelle Mirenda Engineers and Scientists 106 South Street Hopkinton, MA 01748 

 Date Received:
 2/13/09

 Date Reported:
 2/18/09

 P.O. #:
 8-32285

 Work Order #:
 0902-02474

**DESCRIPTION:** GZA FILE# 01.0043532.10 BROOKSIDE TERRACE

Subject sample(s) has/have been analyzed by our Warwick, R.I. laboratory with the attached results.

Reference: All parameters were analyzed by U.S. EPA approved methodologies.

The specific methodologies are listed in the methods column of the Certificate Of Analysis.

Data qualifiers (if present) are explained in full at the end of a given sample's analytical results.

Certification #: RI-033, MA-RI015, CT-PH-0508, ME-RI015 NH-253700 A & B, USDA S-41844

If you have any questions regarding this work, or if we may be of further assistance, please contact our customer service department.

Approved by:

Data Reporting

enc: Chain of Custody

# R.I. Analytical Laboratories, Inc.

# **CERTIFICATE OF ANALYSIS**

GZA GeoEnvironmental Labs

Date Received: 2/13/09 Work Order #: 0902-02474 Approved by:

Data Reporting

Sample # 001 SAMPLE DESCRIPTION: SW-1

SAMPLE TYPE: GRAB **SAMPLE DATE/TIME:** 2/12/2009 @ 10:40

**PARAMETER** 

**SAMPLE** DET.

RESULTS LIMIT

5

UNITS **METHOD**  DATE

ANALYZED **ANALYST** 

TOC

7

mg/l

SM-5310B

2/17/09

RAS



QA/QC Report

Client: WO #:

GZA GeoEnvironmental Labs

0902-02474

Date:

2/18/09

**Description:** 

GZA FILE# 01.0043532.10 BROOKSIDE TERRACE

#### -Method Blanks Results-

Parameter	Units	Results	Date Analyzed	
TOC	mg/l	<5	2/17/2009	

#### -Laboratory Control Standard-

Parameter	Units	Spike Conc. Detected Conc.		% Rec.	Date Analyzed
тос	mg/l	141	135	96	2/17/2009

CHAIN-OF-CUSTODY RECORD

090k - 0005

W.O. #

Note # Temp Blank V Cooler Air 띰  $\mathcal{N}|\sigma$ LAB USE: TEMP. OF COOLER. P.O. NO. EPA 300 🖽 NO2 🖾 NO3 EPA 300 @ CI @ SO4 SPLP -- Specify Below TCLP - Specify Below Wetals (List Below)\*\* MCP 14 Metals (MA) 8-A C 61-M99 C alsten NOTES: (Unless otherwise noted, all samples have been refrigerated to 4° C) \*Specify "Other" preservatives and containers types in this space. (ABO AM) HAV ANALYSIS REQUIRED TURNAROUND TIME Standard Hush L Days, Approved by TPH-GC W/FING. TASK NO: TPH-GC (Mod. 8100) 1294-F808 A4= EPA 8082-PCBs GZA FILE NO: 01-00 435 52. 10 EPA 625 WW SVOCs NS C A C HAR C 07S8 ARE EPA 8270 FULL SVOCs 2001 □ 602 WW VOCs Report Method Blank and Laboratory. Control Sample Results EPA 524.2 DW VOCs EPA 8021 - 8020 List (BTEX) COLLECTOR(S) 1sil 1508 - 0028 Aq LOCATION PROJECT GC Methane, Ethane, Ethene A=Air S=Soil GW=Ground W. SW=Surface W. WW-Waste W. P=Product Other (specify) Edie Arthinson X7 4703 PRESERVATIVE (CI - HCI, M=Methanol, N - HNO3, S - H2SO4, Na - NaOH, O - Other)\* 4142-20 PC SCEIVED BY: (AFFIFIATION) RECEIVED BY: (AFFILIATION) your EXT. 470 CONTAINER TYPE (P-Plastic, G-Glass, V-Vial, T-Teflon, O-Other)\* Matrix GZA GEOENVIRONMENTAL, INC. Date/Time Sampled Labaratory Division Hopkinton, MA 01748 (781) 278-4700 FAX (508) 435-9912 106 South Street RELINQUISHED BY: (AFFILIATION) DATE/TIME DATE/TIME ISHED BY: (AFFILIATION) DATE/TIME 2113/14 1805 RELINQUISHED BY: (AFFILIATION) PROJECT MANAGER: Sample I.D.



Division of Thielsch Engineering, Inc.

#### CERTIFICATE OF ANALYSIS

#### PROJECT NARRATIVE

Edie Hutchinson GZA GeoEnvironmental, Inc. (MA) 106 South Street Hopkinton, MA 01748

**RE: Brookside Terrace** 

ESS Laboratory Work Order Number: 0902155

This signed Certificate of Analysis is our approved release of your analytical results. These results are only representative of sample aliquots received at the laboratory. ESS Laboratory expects its clients to follow all regulatory sampling guidelines. Beginning with this Project Narrative, the entire report has been paginated. The ESS Laboratory Certifications sheet is the final report page. This report should not be copied except in full without the approval of the laboratory. Samples will be disposed of thirty days after the final report has been delivered. If you have any questions or concerns, please feel free to call our Customer Service Department.



#### **Analytical Summary**

The project as described above has been analyzed in accordance with the ESS Quality Assurance Plan. This plan utilizes the following methodologies: US EPA SW-846, US EPA Methods for Chemical Analysis of Water and Wastes per 40 CFR Part 136, APHA Standard Methods for the Examination of Water and Wastewater, American Society for Testing and Materials (ASTM), and other recognized methodologies. The analyses with these noted observations are in conformance to the Quality Assurance Plan. In chromatographic analysis, manual integration may be used instead of automated integration because it produces more accurate results. All ICP Metals were analyzed using the established linear dynamic range to determine acceptable analytical results.

ESS Laboratory certifies that the test results meet the requirements of NELAC, except where noted within this project narrative.

Samples were analyzed in accordance with the Guidelines Establishing Test Procedures for the Analysis of Pollutants, 40 CFR Part 136, as amended.

#### Sample Receipt

The following sample(s) were received on February 12, 2009 for the analyses specified on the enclosed Chain of Custody Record.

Laboratory ID	Matrix	Client Sample ID
0902155-01	Surface Water	SW-1
0902155-02	Surface Water	SW-2

1



Division of Thielsch Engineering, Inc.

#### CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc. (MA)

Client Project ID: Brookside Terrace ESS Laboratory Work Order: 0902155

#### PROJECT NARRATIVE

#### **Classical Chemistry**

0902155-01 The recommended holding time listed in 40 CFR Part 136 for pH, Dissolved Oxygen, Sulfite and

Residual Chlorine is fifteen minutes.

0902155-02 The recommended holding time listed in 40 CFR Part 136 for pH, Dissolved Oxygen, Sulfite and

Residual Chlorine is fifteen minutes.

No other observations noted.

**End of Project Narrative.** 

2



Division of Thielsch Engineering, Inc.

#### CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc. (MA)

Client Project ID: Brookside Terrace

Client Sample ID: SW-1 Date Sampled: 02/12/09 10:40

Percent Solids: N/A Initial Volume: 1000 Final Volume: 1

Extraction Method: 3510C

ESS Laboratory Work Order: 0902155 ESS Laboratory Sample ID: 0902155-01

Sample Matrix: Surface Water

Analyst: SEP Prepared: 02/13/09

#### 608 Polychlorinated Biphenyls (PCB)

Analyte Aroclor 1016	Results ND	Units ug/L	MRL 0.10	<u>Limit</u>	<u><b>DF</b></u>	<u>Analyzed</u> 02/17/09
Aroclor 1221	ND ND	ug/L ug/L	0.10		1	02/17/09
		•			1	
Aroclor 1232	ND	ug/L	0.10		1	02/17/09
Aroclor 1242	0.26	ug/L	0.10		1	02/17/09
Aroclor 1248	ND	ug/L	0.10		1	02/17/09
Aroclor 1254	0.14	ug/L	0.10		1	02/17/09
Aroclor 1260	ND	ug/L	0.10		1	02/17/09
Aroclor 1262	ND	ug/L	0.10		1	02/17/09
Aroclor 1268	ND	ug/L	0.10		1	02/17/09

	%Recovery	Qualifier	LIIIILS
Surrogate: Decachlorobiphenyl	67 %		30-150
Surrogate: Decachlorobiphenyl [2C]	69 %		30-150
Surrogate: Tetrachloro-m-xylene	78 %		30-150
Surrogate: Tetrachloro-m-xylene [2C]	95 %		30-150



Division of Thielsch Engineering, Inc.

#### CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc. (MA)

Client Project ID: Brookside Terrace

Client Sample ID: SW-1 Date Sampled: 02/12/09 10:40

Percent Solids: N/A

ESS Laboratory Work Order: 0902155 ESS Laboratory Sample ID: 0902155-01

Sample Matrix: Surface Water

#### **Classical Chemistry**

Analyte Total Cyanide (LL)	Results ND	Units mg/L	MRL 0.0050	Method 4500 CN CE	<u>Limit</u>	$\frac{\mathbf{DF}}{1}$	Analyst EEM	<u>Analyzed</u> 02/17/09
Total Petroleum Hydrocarbon	ND	mg/L	5	1664A		1	JP	02/20/09
<b>Total Residual Chlorine</b>	0.12	mg/L	0.02	4500Cl D		1	EEM	02/13/09 9:20
<b>Total Suspended Solids</b>	17	mg/L	5	2540D		1	KJK	02/12/09



Division of Thielsch Engineering, Inc.

#### CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc. (MA)

Client Project ID: Brookside Terrace

Client Sample ID: SW-2 Date Sampled: 02/12/09 12:00

Percent Solids: N/A Initial Volume: 1000 Final Volume: 1

Extraction Method: 3510C

ESS Laboratory Work Order: 0902155 ESS Laboratory Sample ID: 0902155-02

Sample Matrix: Surface Water

Analyst: SEP Prepared: 02/13/09

#### 608 Polychlorinated Biphenyls (PCB)

Analyte Aroclor 1016	Results ND	Units ug/L	$\frac{\mathbf{MRL}}{0.10}$	<u>Lin</u>	nit <u>DF</u>	<u>Analyzed</u> 02/17/09
Aroclor 1221	ND	ug/L	0.10		1	02/17/09
Aroclor 1232	ND	ug/L	0.10		1	02/17/09
Aroclor 1242	0.30	ug/L	0.10		1	02/17/09
Aroclor 1248	ND	ug/L	0.10		1	02/17/09
Aroclor 1254	0.13	ug/L	0.10		1	02/17/09
Aroclor 1260	ND	ug/L	0.10		1	02/17/09
Aroclor 1262	ND	ug/L	0.10		1	02/17/09
Aroclor 1268	ND	ug/L	0.10		1	02/17/09

	70Kecovery	Qualifiei	LIIIIICS
Surrogate: Decachlorobiphenyl	77 %		30-150
Surrogate: Decachlorobiphenyl [2C]	86 %		30-150
Surrogate: Tetrachloro-m-xylene	79 %		30-150
Surrogate: Tetrachloro-m-xylene [2C]	95 %		30-150



Division of Thielsch Engineering, Inc.

#### CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc. (MA)

Client Project ID: Brookside Terrace

Client Sample ID: SW-2 Date Sampled: 02/12/09 12:00

Percent Solids: N/A

ESS Laboratory Work Order: 0902155 ESS Laboratory Sample ID: 0902155-02

Sample Matrix: Surface Water

#### **Classical Chemistry**

Analyte Total Cyanide (LL)	Results ND	Units mg/L	MRL 0.0050	Method 4500 CN CE	<u>Limit</u>	<u><b>DF</b></u>	Analyst EEM	<u>Analyzed</u> 02/17/09
Total Petroleum Hydrocarbon	ND	mg/L	5	1664A		1	JP	02/20/09
Total Residual Chlorine	0.06	mg/L	0.02	4500Cl D		1	EEM	02/13/09 9:20
<b>Total Suspended Solids</b>	29	mg/L	5	2540D		1	KJK	02/12/09



Division of Thielsch Engineering, Inc.

#### CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc. (MA)

Client Project ID: Brookside Terrace

## ESS Laboratory Work Order: 0902155

Source

Spike

%REC

RPD

#### **Quality Control Data**

Analyte	Result	MRL	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifie
		608 Polych	lorinated B	iphenyls (	PCB)					
atch BB91320 - 3510C										
Blank										
Aroclor 1016	ND	0.10	ug/L							
Aroclor 1221	ND	0.10	ug/L							
Aroclor 1232	ND	0.10	ug/L							
Aroclor 1242	ND	0.10	ug/L							
Aroclor 1248	ND	0.10	ug/L							
Aroclor 1254	ND	0.10	ug/L							
Aroclor 1260	ND	0.10	ug/L							
Aroclor 1262	ND	0.10	ug/L							
roclor 1268	ND	0.10	ug/L							
Surrogate: Decachlorobiphenyl	0.0382		ug/L	0.05000		76	30-150			
Gurrogate: Decachlorobiphenyl [2C]	0.0409		ug/L	0.05000		82	30-150			
Surrogate: Tetrachloro-m-xylene	0.0326		ug/L	0.05000		65	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	0.0406		ug/L	0.05000		81	30-150			
cs										
Aroclor 1016	0.96	0.10	ug/L	1.000		96	40-140			
roclor 1260	0.91	0.10	ug/L	1.000		91	40-140			
urrogate: Decachlorobiphenyl	0.0417		ug/L	0.05000		83	30-150			
Currogate: Decachlorobiphenyl [2C]	0.0457		ug/L	0.05000		91	30-150			
Surrogate: Tetrachloro-m-xylene	0.0429		ug/L	0.05000		86	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	0.0500		ug/L	0.05000		100	30-150			
CS Dup										
roclor 1016	0.96	0.10	ug/L	1.000		96	40-140	0.02	50	
roclor 1260	0.93	0.10	ug/L	1.000		93	40-140	1	50	
Surrogate: Decachlorobiphenyl	0.0408		ug/L	0.05000		82	30-150			
Gurrogate: Decachlorobiphenyl [2C]	0.0444		ug/L	0.05000		89	30-150			
Surrogate: Tetrachloro-m-xylene	0.0411		ug/L	0.05000		82	30-150			
urrogate: Tetrachloro-m-xylene [2C]	0.0475		ug/L	0.05000		95	30-150			
		Cl	assical Che	mistry						
Batch BB91220 - General Preparation										
Blank										
otal Suspended Solids	ND	5	mg/L							
cs										
otal Suspended Solids	62		mg/L	60.60		102	80-120			
Batch BB91303 - General Preparation										
Slank Fotal Residual Chlorine	ND	0.02	mg/L							
	שוו	0.02	mg/L							
LCS			mg/L	1.580		97	85-115			
Total Residual Chlorine	1.54									

185 Frances Avenue, Cranston, RI 02910-2211 Tei Dependability

Tel: 401-461-7181

Quality

Fax: 401-461-4486 ◆ Service http://www.ESSLaboratory.com



Division of Thielsch Engineering, Inc.

#### CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc. (MA)

Client Project ID: Brookside Terrace

#### ESS Laboratory Work Order: 0902155

#### **Quality Control Data**

					Spike	Source		%REC		RPD	
Analyte		Result	MRL	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifier
			Cla	assical Che	mistry						
Batch BB91303 - General Pr	reparation										
Total Residual Chlorine		0.06	0.02	mg/L		0.06			0	20	
Batch BB91703 - TCN Prep											
Blank											
Total Cyanide (LL)		ND	0.0050	mg/L							
LCS											
Total Cyanide (LL)		0.0194	0.0050	mg/L	0.02006		97	90-110			
LCS											
Total Cyanide (LL)		0.138	0.0050	mg/L	0.1504		92	90-110			
LCS Dup											
Total Cyanide (LL)		0.140	0.0050	mg/L	0.1504		93	90-110	1	20	
Duplicate So	urce: 0902155-02										
Total Cyanide (LL)		0.0020	0.0050	mg/L		0.0023			14	20	
Matrix Spike So	urce: 0902155-02										
Total Cyanide (LL)		0.0980	0.0050	mg/L	0.1003	0.0023	95	75-125			
Batch BB92005 - General Pr	reparation										
Blank											
Total Petroleum Hydrocarbon		ND	5	mg/L							
LCS											
Total Petroleum Hydrocarbon		19	5	mg/L	20.00		94	66-114			



Division of Thielsch Engineering, Inc.

#### CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc. (MA)

Client Project ID: Brookside Terrace ESS Laboratory Work Order: 0902155

#### **Notes and Definitions**

U	Analyte included in the analysis, but not detected
HT	The recommended holding time listed in 40 CFR Part 136 for pH, Dissolved Oxygen, Sulfite and Residual Chlorine
	is fifteen minutes.
ND	Analyte NOT DETECTED above the detection limit
dry	Sample results reported on a dry weight basis
מממ	Deletine Demont Difference

RPD Relative Percent Difference
MDL Method Detection Limit
MRL Method Reporting Limit
L/V Initial Volume

I/V Initial Volume F/V Final Volume

§ Subcontracted analysis; see attached report

Range result excludes concentrations of surrogates and/or internal standards eluting in that range.

Range result excludes concentrations of target analytes eluting in that range.
 Range result excludes the concentration of the C9-C10 aromatic range.

Avg Results reported as a mathematical average.



Division of Thielsch Engineering, Inc.

#### CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc. (MA)

Client Project ID: Brookside Terrace ESS Laboratory Work Order: 0902155

#### ESS LABORATORY CERTIFICATIONS

U.S. Army Corps of Engineers Soil and Water

Rhode Island: A-179 Potable and Non Potable Water http://www.health.ri.gov/labs/waterlabs-instate.php

Connecticut: PH-0750 Potable and Non Potable Water, Solid and Hazardous Waste http://www.ct.gov/dph/lib/dph/environmental health/environmental laboratories/pdf/out state.pdf

> Maine: RI002 Potable and Non Potable Water http://www.maine.gov/dep/blwq/topic/vessel/lab list.pdf

Massachusetts: M-RI002 Potable and Non Potable Water http://public.dep.state.ma.us/labcert/labcert.aspx

New Hampshire (NELAP accredited): 242405 Potable and Non PotableWater http://www4.egov.nh.gov/des/nhelap/namesearch.asp

New York (NELAP accredited): 11313 Potable and Non Potable Water, Solid and Hazardous Waste http://www.wadsworth.org/labcert/elap/comm.html

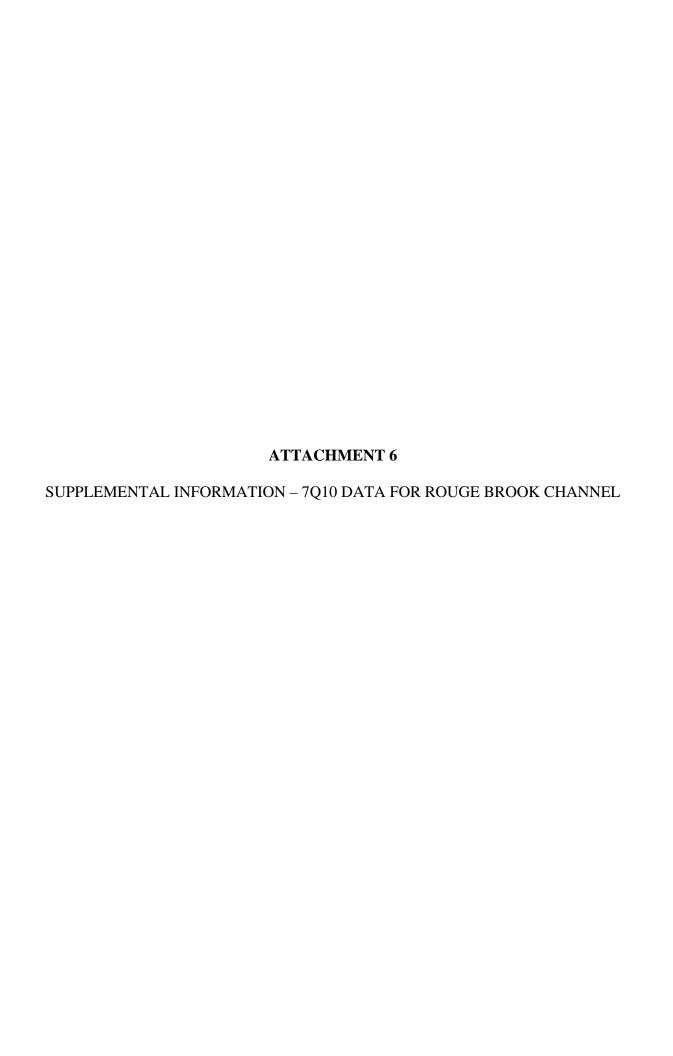
> United States Department of Agriculture Soil Permit: S-54210

New Jersey (NELAP accredited): RI002 Potable and Non Potable Water, Solid and Hazardous Waste http://www.nj.gov/dep/oqa/certlabs.htm

Maryland: 301 Potable Water http://www.mde.state.md.us/assets/document/wsp labs

South Carolina: 78003 Volatile Organic Compounds in Potable Water

Note # 9 0 Temp Blank Cooler Air DSee Attached Sheet tax Antysis Hothod and Regulad RLS O 6 ပွ (for la EON [] SON [] 005 AFE LAB USE: TEMP. OF COOLER W.O. # EPA 300 [] CI [] 504 SHEET TCLP - Specify Below Netals (List Below)" 8-A C. ST-MARI C. STRIBN NOTES: (Unless otherwise noted, all samples have been refrigerated to 4° C) \*Specify \*Other" preservatives and containers types in this space. (MA DEP) ANALYSIS REQUIRED (930 AM) H93 TURNAROUND TIME: Standard Rush Days, Approved by TPH-GC W/FING. য 1899-1808 AG EPA 8082-PCBs Coole Tengo 3,6" EPA 625 WW SVOCs GZA FILE NO: 61.004353.10 EPA 8270 FULL SVOCS 001 U 602 WW VOC EPA 624 WW VOCs PPA 524.2 DW VOCs COLLECTOR(S) 188 TS08 - 08S8 A9E LOCATION PROJECT A=Air S=Soil GW=Ground W. SW=Surface W. IWW=Waste W. DW=Drinking W. P=Product Other (specify) PRESERVATIVE (CI - HCI, M=Methanol, N - HNO3, S - H2SO4, Na - NaOH, O - Other)\* CEIVED BY: (AFFILIATION) RECEIVED BY: (AFFICIATION)  $\mathcal{G}$ PROJECT MANAGER: MICK//E MINEMALA EXT. 4740  $\mathcal{S}$ CONTAINER TYPE (P-Plastic, G-Glass, V-Vial, T-Teflon, O-Other)\* Matríx Edie Hutchinson X4703 GZA GEOENVIRONMENTAL, INC. ara Osto 1800 CHAIN-OF-CUSTODY RECORD Date/Time Sampled Labaratory Division Hopkinton, MA 01748 (781) 278-4700 FAX (508) 435-9912 2/12/69 18:00 BY: (AFFILIATION) DATE/TIME 106 South Street DATE/TIME, 1655 ( Sample I.D. RELINQUISH





#### **≥USGS**

#### Massachusetts StreamStats

### Streamstats Ungaged Site Report

Date: Fri May 15 2009 12:27:14 Site Location: Massachusetts NAD83 Latitude: 42.0652 (42 03 54)
NAD83 Longitude: -72.0072 (-72 00 25)
NAD27 Latitude: 42.0651 (42 03 54)
NAD27 Longitude: -72.0077 (-72 00 27)
Drainage Area: 10.3 mi2

Peak Flow Basin Characteristics			
100% Statewide Low Flow (10.3 mi2)			
Parameter	Value	Regression Equation Valid Range	
	_	Міп	Max
Drainage Area (square miles)	10.3	1.61	149
Mean Basin Slope from 250K DEM (percent)	2.8	0.32	24.6
Stratified Drift per Stream Length (square mile per mile)	0.00184	0	1.29
Massachusetts Region (dimensionless)	0	0	1

Streamflow Sta	atistics				
		Prediction Error	Equivalent	90-Percent Prediction Interval	
Statistic	Flow (ft <sup>3</sup> /s)	(percent)	years of record	Minimom	Maximum
DS0	10.3	18		5.9	17.9
D60	6.67	20		2.92	15.1
D70	3.26	24		1.05	9.99
D75	2.36	26		0.78	7.04
080	1.5	28		0.49	4.51
085	1.07	32		0.32	3.53
D90	0.65	37		0.19	2.14
D95	0.38	46		0.1	1.39
D98	0.24	60		0.0555	0.94
D99	0.17	65		0.0384	0.73
M7D2Y	0.45	50		0.11	1.71
AUGD50	1.13	33		0.34	3.73
M7D10Y	0.14	71		0.028	0.66



GZA
GeoEnvironmental, Inc.
One Edgewater Drive
Norwood, MA 02062
781-278-3700
Fax 781-278-5701 http://www.gza.com

Engineers and Scientists

JOB _ 01.0	0 4353	2.10
		OF
CALCULATED BY <u>S</u>	aujchintale	Pat DATE 8/18/09
		B.175
SCALE	VA	

Dilution Factor Calculations:
Dilution factor, DF = Od + Qs
where, $O_d = Maximum flow rate of discharge$ in cubic feet per second (cfs)  (198m = 0.00223 cfs)
Os = Receiving water 7010 flow(cfs) from USGS Streamstate website}
$Q_d = 1009 \text{Pm} = 0.22 \text{cfs}$ $Q_5 = 0.14 \text{ cfs}$
DF = Qd + Qs = 0.22 + 0.14 = 1.63

ATTACHMENT 7	
COPY OF A LETTER FROM TRIBAL HISTORIC PRESERVATION	OFFICER

950 CMR: OFFICE OF THE SECRETARY OF THE COMMONWEALTH

@ 36970

# APPENDIX A MASSACHUSETTS HISTORICAL COMMISSION 220 MORRISSEY BOULEVARD BOSTON, MASS. 02125 617-727-8470, FAX: 617-727-5128

RECEIVED

MAR 24 2009

MASS. HIST. COMM

#### PROJECT NOTIFICATION FORM

Project Name: Brookside	Terrace Apartments
Location / Address: 11 Villag	ge Drive - Map 58, Lots 22823
City / Town: _Southbodd	
Project Proponent	
Name: Brookside Terr	Tace Associates
Address: One Bodge S-	1, Suite 300
	on, MA 02458
Agency license or funding for the project sought from state and federal agencies).	t (list all licenses, permits, approvals, grants or other entitlements being
Agency Name	Type of License or funding (specify)
Please see attache	ed permit list
Project Description (narrative):	
Please see attach	ed narrative
Does the project include demolition? are proposed for demolition.	If so, specify nature of demolition and describe the building(s) which
No	
Does the project include rehabilitation and describe the building(s) which are	on of any existing buildings? If so, specify nature of rehabilitation e proposed for rehabilitation.
No	
Does the project include new construc	ction? If so, describe (attach plans and elevations if necessary).  After review of MHC files and the materials
No	you submitted, it has been determined that this project is unlikely to affect significant
5/31/96 (Effective 7/1/93) - corrected	historic or archaeological resources.  950 CMR - 275
	MHT RC 36970
	Senior Archaeologist 30 March 2009
	Massachusetts Historical Commission
	xc: Southbridge Historia

#### 950 CMR: OFFICE OF THE SECRETARY OF THE COMMONWEALTH

#### APPENDIX A (continued)

To the best of your knowledge, are any historic or archaeological properties known to exist within the project's area of potential impact? If so, specify,

What is the total acreage of the project area? 19,5 a Cres (whole SIR but remediation area concentrated along the north bank of Lebanon E Productive Resources:
Woodland acres Productive Resources:
Wetland 1.8± acres Agriculture acres
Floodplain 2 acres Forestry acres
Open space 12 acres Mining/Extraction acres
Developed 180T acres Total Project Acreage acres
What is the acreage of the proposed new construction? acres
What is the present land use of the project area?
Apartment units
Please attach a copy of the section of the USGS quadrangle map which clearly marks the project location.
This Project Notification Form has been submitted to the MHC in compliance with 950 CMR 71.00.
Signature of Person submitting this form: Michael Simoneaus Date: 3/20/09
Name: Michele Simoneaux (GZA GeoEnvironmentel)
Address: One Edgewater Dove
City/Town/Zip: Nacrocad, MA 07067
Telephone: 781-778-5807
REGULATORY AUTHORITY
950 CMR 71 00° M G L c 9 88 26-27C as amended by St. 1988, c. 254